WISE II V7

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Warning and Interactive Statement Editor II

1. Introduction

WISE II V7 offers a comprehensive National Weather Service (NWS) product composition package. WISE II V7 is capable of producing both segmented and unsegmented products with several advanced features over previous WISE II versions. The WISE II Graphical User Interface (GUI) has been improved to support the demands for segmented products such as the winter storm (WSW) and non-precipitation weather (NPW) watches/advisories/warnings. Since V6, the GUI supports the public zone, marine zone, and county-defined products. A detailed explanation of WISE II upgrades, specifically from V6.20 to V7 can be found in the ReadMe ASCII DOS text file accompanying this version. The WISE II editor continues to be improved and these improvements are readily obvious to the V7 user, especially in the use of templates and product generation.

WISE II V7 has retained its local adaptation ability, so that the NWS field can add/remove a variety of products in the listing of statements. WISE allows the selection of call to action statements, which may also be tailored for individual stations, for inclusion in statements and warnings. Preformats can be defined that allow issuance of generic statements requiring little modification. External programs that produce product texts may be called from WISE. WISE II V7 retains the template feature that can be used to set up statements and warnings interactively in customizable formats. However, editing of the templates is discouraged because the opportunity for error exists due to the technically sophisticated commands, and accidental removal of essential template commands can result in products created that do not conform to NWS product format policies.

Products written using WISE may enter the Automated Field Operation System (AFOS) communication network by any of several methods. WISE will transmit products asynchronously to AFOS through a direct connection or peripheral sharing device (PSD). On local area networks, WISE can be set up to store outgoing products in a disk directory (queue) to be transmitted by another program, such as PC-AFOS by William J. Gery, running on a server with a direct connection to AFOS. New in this version of WISE is the ability to send products to a network printer queue from which a driver transmits products.

WISE also offers an advantage when used on a LAN. Products written using WISE on one network computer can be corrected on another. Additionally, a list of current products can be displayed that includes all statements and warnings issued by WISE from all computers connected to the LAN. Statements may be configured to use this list to produce a leader that includes selected current statements or warnings.

2. Configuration

WISE will run on an IBM compatible computer (486 or Pentium 66MHz or greater preferred) with a minimum of 640K. A typical installation of WISE will require up to 2 MB of hard disk space with at least an additional 1 MB for product storage. A connection to AFOS through a communications (COM) port is needed. Alternately, on a local area network (LAN), a server with an asynchronous connection to AFOS may be used to transmit products to AFOS by using PC-AFOS or equivalent software. A printer is not required; however, an IBM compatible printer is recommended.

3. Methodology and Software Structure

The following executable files are included in the WISE V7 distribution:

INSTALL.EXE	BRUN45.EXE[1]	WISEII.EXE	WISEMAP.EXE
WISELOC.EXE[2]	WISEREC.EXE		

The following configuration files are used by WISE and must be edited for local use:

WISE.BAT[3]	WISE.BPP[4 5]	WISE.BPT[4 5]	WISE.CFG[4]
WISE.CMP[6]	WISE.CTY[4]	WISE.DIC[7]	WISE.RAD[4]
WISE.SMT[4]	WISE.ST[4]	WISE.ZMP[6]	WISE.ZNS[4]
WISELOC.DAT[2]	WISELOC.PTR[2 8]	WISEREC.BAT[3]	

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1 The Microsoft QuickBASIC library executable BRUN45.EXE is required to run all WISE software. See the installation section for more details.

2 The WISE Locator executable and configuration files are required if the automatic path cast feature is utilized.

3 This file is DOS text editable.

4 This file is created by the INSTALL.EXE program.

5 Marine configuration files will not be required at all offices.

6 This file is created using WISEMAP.EXE.

7 This file is created by WISEII.EXE if it does not already exist.

8 This file is created by WISELOC.EXE if it does not already exist.

The following template files are provided to implement current NWS warning formats in WISE:

FFWB.TPL[1]	FFWB2.TPL[1]	FFWDAMB.TPL[1]	NPW.TPL[1]
SMWB.TPL[1]	SVRB2.TPL[1]	SVRB.TPL[1]	SVRBL.TPL[1]
TORB.TPL[1]	TORBL.TPL[1]	WSW.TPL[1]	

The following WISE call to action files are provided, but should be edited for local needs:

WISE.CTA[1 2 3]	COAST.CTA[1]	FLOOD.CTA[1]	SEVERE.CTA[1]
STAYTUND.CTA[1]	THUNDER.CTA[1]	TORNADO.CTA[1]	WISE.CTA[1]
COLDWX.CTA[1]	FOG.CTA[1]	HOTWX.CTA[1]	WINDDUST.CTA[1]
WINTERWX.CTA[1]			

The following files used by WISE are provided, but may be edited for local needs:

WISE.HLP[1] WISE.VTC[4]

The following PIF files and icons are provided for creating links to WISE from Windows:

WISE.ICO WISE.PIF[5] WISEREC.ICO WISEREC.PIF

The following files are provided for your convenience:

WISELABL.WPD WISE.BMP

After WISE II has been installed/configured, and WISE II V7 is operationally started, a program check is made to ensure the necessary configuration files exist. At a minimum, WISE expects to find six files in the main WISE directory as well as each backup location directory: WISE.CFG (hardware and office configuration), WISE.CTA (list of call to action files), WISE.CTY (county definitions), WISE.ZNS (zone definitions), WISE.ST (state definitions) and WISE.SMT (statement definitions). Each of these files is created using the INSTALL program.

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1 This file is DOS text editable.

2 This file contains a reference to the other call to action files (*.CTA) provided and may be edited to add additional files.

3 This file is created by the INSTALL.EXE program.

4 This file is for future use and may or may not be present.

5 This Windows PIF file includes the path C:\WISE. This must be changed if differing paths are used.

Any required files that are not found will be listed on the screen, and the program will cease. Other configuration files, including WISE.BPT (breakpoint definitions), WISE.BPP (breakpoint phrases), and WISE.ZG? (zone grouping files) may be needed at a particular site. The WISE.ZMP and WISE.CMP (map) files must also be present if graphical selection is desired.

When all necessary files have been located, WISE will either locate the WISE.TMP directory or create it. When this directory is located, WISE will remove all temporary files in this directory that are more than 12 hours old to prevent accumulation of old work files. Each time WISE starts, it creates uniquely named temporary files in the WISE.TMP directory. The work files contain information concerning products in progress and are recreated each time a new product is begun. When WISE is exited normally, WISE will wipe out all temporary files created within that session. Because each WISE session owns a unique set of work files, multiple WISE sessions are possible on one PC and WISE may be run across a LAN without destructive interaction.

The main screen allows the user to select one of four options. The "WARNING/ STATEMENT" and "Practice" selections specify whether an actual or a practice product is being prepared. WISE uses this selection to determine the AFOS key for the product (i.e., an actual product key or a WRK product). Additional text will be created in the product's Mass News Disseminator (MND) header indicating that the statement is a test message if "Practice" is chosen. Additionally, within the text of warning products, the warning type will be prefixed by "TEST" (i.e., "TEST TORNADO WARNING"), provided that the warning type is inserted using the {WARN} template function.

The "Service Backup" option allows the user to identify the station being backed up; when selected, WISE goes to the subdirectory identified by the call letters of the station selected to read the appropriate WISE.CFG, WISE.CTY, WISE.CMP, WISE.ZNS, WISE.ZMP, WISE.BPT, WISE.BPP, WISE.ST, WISE.SMT, and WISE.CTA files. No other files need to reside in these subdirectories. The MND will indicate that the statement was issued for the selected station. The final option allows selection of backup communications, if needed. The current communications method and office currently being served is indicated above the selection box.

Following selection of either "WARNING/STATEMENT" or "Practice", WISE displays a menu of statement types, from which the user selects one. On this screen is also an option for product correction. If the **correction** option is selected, the statement will include the word "CORRECTED" in the product's MND and grab the product time from the MND of the last product of the type selected.

If a product is configured to have UGC, the user must next choose from a table of valid time periods or specify a custom expiration time period. Then WISE will load the WISE.CTY, WISE.BPT, or WISE.ZNS UGC files, depending on product configuration. If

available, WISE will also load the WISE.CMP (CWA) or WISE.ZMP (zone forecast area) map files, making the geographic areas available for **graphical selection** using a mouse. The geographic locations may also be selected from a tabular listing of the WISE.CTY, WISE.BPT, or WISE.ZNS file.

For products that are configured to include a call to action, WISE will display a call to action selection screen showing a number of categories. When a category is selected, a user may then select actual calls to action. On this same screen, a user may insert preformat files. Those statements and preformats that are selected will be appended to the end of the product.

There are several ways that WISE may produce a default basis for a statement in WISE. When a product is configured to use a preformat file (ending in .PFT), WISE will copy its contents verbatim into the product's basis. If, instead of a preformat, an executable file (ending in ".EXE", ".COM", or ".BAT") is specified in the product definition, WISE will execute the program and then copy a file by the same name having a ".TXT" extension into the product basis. If a template (.TPL) file, which is a simple script, is indicated, the template will be run and the text returned by the template will be copied to the basis file. Products may also be written that have no default basis.

Finally, before the editing screen appears, WISE assembles the entire product in AFOS asynchronous format. For those products so configured, WISE will then prompt for storm reports. When the user indicates that storm reports will be included in the product, WISE appends an ampersand (&) to the product.

On the edit screen, the entire product is displayed for editing. The user has the option to change any of the components of the message, such as expiration time, by pressing the assigned function key. The AFOS Product Inventory Listing (PIL) line is protected from editing, and the NNNN at the end of the message is hidden to prevent accidental deletion.

White diamonds "**"**", and "$$"delimiters in segmented products, appear on the blue edit page during the product editing phase. These symbols are designed to delimit areas within the product that can be changed by using the easy-to-use tool bar function keys and other areas of the product that can be changed manually.

N NOTE: For unsegmented products, the protected edit area is located between the last two diamonds. Most unsegmented products have only one diamond. Warnings that use templates to generate text (i.e., Tornado Warning), will have an additional diamond between the automatically generated text and the rest of the basis. Text that precedes the first diamond is automatically updated when header information is changed

using the function keys (F4-F6). For segmented products, the protected text area is located between the diamond and $$ delimiters of each forecast segment. The area above the diamond in each segment is updated whenever header information is changed using the function keys (F4-F6). The area after the last diamond in unsegmented products, or the last $$ in segmented products, is treated as the call-to-action area. Text edited in this area will be lost if call-to-action stations are selected using the F8 function key. Text preceding the first diamond in a segmented product is assumed to be summary information and is protected when changes to the header are made provided that there is a space between the MND and this text.

N NOTE: The preferred way to update the counties, zones, or marine areas selected and ensure that those changes remain in place is to use the expiration time (F5) and UGC (F6) function keys on the edit screen.

The user may select, using “F9", the basis from the previous statement for segmented products or as many as ten previous WISE products for unsegmented products to use as a starting point for editing. The basis from previous unsegmented products are read from files named OLD.# (#=0-9) in the WISE directory, where the larger numbered file extensions represent the oldest products. In segmented products, the basis is read from a file located in the WISE data directory having the same file name as the product file but with either a “.PRS” or “.PRP” (for practice products) extension. The latest basis for each previously defined area is linked to a UGC in this file. This feature makes WISE a good short term forecast and zone forecast writing tool.

The spell checker is also accessible (F2) on the editing screen. WISE defaults to the WISE.DIC dictionary file, though other files with the ".DIC" extension created using WISE may be selected for use.

Upon completion of the product, the user has several options including sending the product to AFOS, printing the product, changing the communication mode, sending the printer a line feed, reviewing the message, and resetting WISE to prepare for the next message. At sites where a local paging program has been developed (WISEPAGE.EXE or WISEPAGE.BAT), the user may alternately elect to send the product to AFOS and the pager. When the option to send the product to AFOS is chosen, a dialog box will request verification of the header so the user has an opportunity to make any necessary changes to the AFOS communications header.

Once the product has been sent to AFOS, it is also stored in the WISE data directory. A copy of the product is also stored as LAST.LOG in the WISE directory for use by external paging programs, created locally. A copy of the basis is stored OLD.0 in the WISE directory also (OLD.0 through OLD.8 are incremented while OLD.9 is discarded). A copy of the message may also be appended to STATMNTS.LOG file or the PRACTICE.LOG file (for practice products), if this function is enabled. A record of the transmitted product is stored in #.DAT (where # is the day of the month) in the WISE directory. If a message is edited after transmission, the AFOS header and MND are modified automatically to indicate the product is a correction.

4. Cautions

Windows presents communications challenges which are not difficult to overcome, but that must be addressed to ensure that all products go to AFOS. Please be sure to read Appendix H, which addresses running WISE on Windows 95.

It is important when using WISELOC that the WISELOC.PTR file created by the program not be write-protected. Though most of the files in the WISE program directory may be write protected without adverse affects, WISELOC needs to be able to write to this file whenever the WISELOC.DAT file has been updated. It is safest to leave all WISE files unprotected - users can easily delete even protected files in Windows, so there is little advantage to file write protection.

5. Data File Maintenance

With the exception of the WISE.BAT file, call to action files, template files, and preformat files, and the WISELOC.DAT file, all file maintenance must be done using the INSTALL program supplied with WISE. The WISE.CFG, WISE.CTY, WISE.ZNS, WISE.BPT, WISE.ST, WISE.CTA, WISE.ZMP, WISE.CMP, WISE.BPP and WISE.SMT files must be created or updated as described in the WISE Setup section. If the statement logging option is enabled, the STATMNTS.LOG and PRACTICE.LOG files should be periodically deleted to prevent them from devouring hard disk space. The WISE.TXT file should be inspected occasionally for misspelled words and then deleted. Words misspelled can be corrected or removed using the Dictionary Optimization Module described in the WISE Setup section. WISE produces daily statement log files (i.e., 1.DAT for the 1st of the month). These files do not reset themselves, so they should be periodically deleted once the data contained within them is no longer needed.

6. References and Acknowledgments

Preston, Vernon L.: Weather Preparedness and Call to Action Statement Handbook.

Foster et al: SRWARN V7.0 User's Manual

Brown, Ralf and Jim Kyle: PC Interrupts, Addison-Wesley Publishing Co., New York, 1991.

Greatest appreciation is due the NWS Office of Meteorology (OM), including Bill Alexander and Jannie Gibson, whose support was absolutely essential to producing this update to WISE. Thanks also to Laura Cooke, also at OM, for guidance concerning marine products.

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Last and not least, thanks to God who blessed me with the abilities and patience that have led me through yet another chapter in the WISE saga!

7. WISE Setup

Upgrading from WISE V6 to WISE V7

In order to make the product support improvements to WISE V7, the following files are new, therefore must replace V6.x files:

INSTALL.EXE	WISEII.EXE	WISELOC.EXE	
WISEREC.EXE	WISEMAP.EXE		
FFWB.TPL	FFWB2.TPL	FFWDAMB.TPL	NPW.TPL
SMWB.TPL	SVRB2.TPL	SVRB.TPL	SVRBL.TPL
TORB.TPL	TORBL.TPL	WSW.TPL	
WISE.HLP	WISE.VTC		

The following files should be reviewed and updated:

WISE.SMT	Add segmented and ordered NPW and WSW products to your product list by the date that OML 4-98 is effective.
*.TPL	Test your template files and remove or replace outdated commands and functions.

For sites installing WISE for the first time, a sample WISE.SMT (statement definition file) is supplied. It is highly advisable to make changes to each definition.

Call to action (.CTA), preformat (.PFT), and template (.TPL) files included in the new V7 distribution should be inspected and altered for use at each location since some supplied statements may not apply at all locations. The severe thunderstorm line template (SVRB2.TPL) and the template for flash flooding caused by widespread heavy rain (FFWB2.TPL) are new templates that have been included in this release. To implement the new segmented NPW/WSW format, the new NPW and WSW template files (NPW.TPL and WSW.TPL) must be installed and assigned to the NPW and WSW products in the statement definition file (WISE.SMT).

Templates created for previous versions of WISE should be tested. Some template functions in WISE V7 work slightly differently than in previous versions due to changes in the WISE template feature. In particular, all WISE time template commands have been removed and the "[EDIT]" command replaces the functionality of "[GET LIST]", "[START LIST]", "[END LIST]", and "{LIST}".

If you are using WISELOC, please refer to the WISELOC documentation for information concerning this file. Particularly, WISE V7 needs to pass temporary file information to the WISELOC program using the new template function {PATH}. This function returns the WISE temporary file name, including the directory path. Templates created for WISELOC V5 or earlier that call WISELOC must be changed as follows:

Old template commands	***New template commands***
[RUN]	[RUN]
WISELOC.EXE	WISELOC.EXE {PATH}
[FILE]	[FILE]
WISELOC.TXT	{PATH}TXT

Finally, run through at least one of each of the statements you have defined in WISE that use templates. Minor changes to the template function may result in slightly different results than those observed in the past.

Initial Installation - Starting From Scratch

Locate a copy of the Microsoft QuickBASIC library executable (BRUN45.EXE). This file may be obtained from regional FTP servers, Internet shareware sites, or from other programs (like SHARP) that require this file to run. You need only to install one copy of this program on each computer within the computer's command search path.

To determine if you have a copy of BRUN45.EXE you may issue the following commands at the DOS prompt (recent versions of DOS):

```
C:
CD \
DIR/S BRUN45.EXE
```

Note the directory where BRUN45.EXE was found. If the file exists on the hard drive, it must also reside in the command search path for programs like WISE to access it. Determine whether the directory where BRUN45.EXE was found is included in the search path by typing "PATH" at the DOS command prompt. Observe whether the directory where BRUN45.EXE was located is within the list of directories output by PATH. If it is not, move the file to one of the listed directories.

If the computer does not have a BRUN45.EXE file, obtain a copy and place it in one of the directories listed when you type "PATH" at the DOS command prompt. On DOS and Windows 3.x machines, the preferred path is C:\DOS. On Windows 95, the preferred path is C:\WINDOWS\COMMAND.

Continue on to the next section entitled "Manual WISE Installation".

Manual WISE Installation

To install WISE, first obtain the latest version from the WISE Web Site at http://www.srh.noaa.gov/wise. These files will be compresses in a ZIP file format. For browsers that do not support Javascript or frames as implemented in the default WISE web page, the site http://www.srh.noaa.gov/wise/noframe.htm is available.

Create a directory where WISE and its data files should be installed (C:\WISE). Then, either unzip WISE files into or copy WISE files into this directory. Once this has been done, run the INSTALL program as described in the sections that follow. Note the information concerning the BRUN45.EXE file in the previous section.

Below is a preferred order for editing WISE configuration files:

1. Plot out marine zones, if any on paper as a reference.
2. Edit the WISE.CFG configuration file.
3. Edit the WISE.BAT file if necessary.
4. Edit WISE.RAD.
5. Edit WISE.BPP file.
6. Edit WISE.BPT file (you will not have a map to click on to assign marine zones to geographic areas yet).
7. Determine common zone groupings and write out the UGC for those groups. Create WISE.ZGx files for each group (x is a zone grouping number or letter).
8. Edit WISE.ZNS and WISE.CTY files (again you have no map to click on).
9. Get zone and county outline files via FTP and create maps using **WISEMAP**.
10. Edit WISE.CMP and WISE.ZMP map files to add marine areas.
11. Edit WISE.BPT, WISE.ZNS, and WISE.CTY files to assign marine areas, counties and zones to areas on the zone and county maps.
12. Edit WISE.ST.
13. Edit WISE.SMT statement definition file.
14. Customize the WISE.CTA and its associated ".CTA" files.

Running INSTALL after Initial Installation

Once the initial installation has been accomplished, INSTALL may be run as needed to change the configuration files or to set up or change the configuration files for service backup locations. To run the INSTALL program, simply make the directory containing INSTALL.EXE the current directory and type "INSTALL" <Enter>.

Enabling product recovery

In WISE V7, the “Recover” option has been pulled from the product selection screen. However, product recovery is now implemented through an add-on utility, WISEREC.EXE. This program looks for “lost” product composition files and prepares WISE for the recovery of these files upon the subsequent running of the WISE program.

There are two ways to set up WISE to utilize this program. The first of these options, and probably the easiest, is to include the command WISEREC.EXE in the WISE.BAT file on the line immediately before WISEII.EXE. Normally WISEREC will silently run with no output to the screen. If output from this program is desired every time WISE is run using the WISE.BAT file, add the command WISEREC.EXE/V instead. When WISE is set up in this way, the user just has to run WISE to do product recovery.

The second option is to create a copy of WISE.BAT called WISEREC.BAT that contains the same changes as those described for the WISE.BAT file above. When a product needs to be recovered, the user runs WISEREC.BAT from the command line or clicks on a Windows icon linked to this batch file. The icon file WISEREC.ICO and WISEREC.PIF files are provided for this purpose.

Refer to the section on “Editing WISE.BAT” for additional details on the format of the WISE.BAT file.

Running INSTALL to Setup Service Backup Locations

By default, INSTALL assumes you are altering the configuration for the "home" location, which is your NWS office. There are two methods of creating and/or altering the configuration file for another location. The first method is performed from the DOS prompt. Type "INSTALL/xxx" or "INSTALL xxx", where "xxx" is the station ID of that location. For instance, if you are in Goodland (GLD) and your office provides backup for Dodge City (DDC), type "INSTALL/DDC" to create or edit Dodge City configuration files. The second method is to choose "Select Office" from the Installation/Configuration main menu.

The configuration files for backup locations are stored in separate WISE subdirectories whose names are the same as the backup station identifiers. These subdirectories are created by the INSTALL program. When a new location is specified and the directory does not exist for that location, INSTALL will prompt for verification before creating the new directory.

The only files that need to be in the station backup directories are WISE.CFG, WISE.ZNS, WISE.CTY, WISE.ST, WISE.CTA, and WISE.SMT. The WISE.CMP and WISE.ZMP map files may also be present if graphical maps have been created for backup locations. Backup location specific preformat (*.PFT) and template (*.TPL) files may be created in service backup location directories, otherwise preformats and templates in the WISE program directory may be used. Dictionary files and the actual call to action files (*.CTA) must be in the WISE program directory.

The INSTALL Program Main Menu

When the installation program is run, the options on the main menu include "Edit menu", "Print menu", "Select Office", "Spelling dictionary (WISE.DIC) management", and "Exit".

The "Edit menu" option allows access to the configuration editing routines. The files that may be altered using options from the "Edit menu" include WISE.CFG (the office configuration file), WISE.CTY (the county configuration file), WISE.CMP (county warning area graphic file), WISE.ZNS (the zone configuration file), WISE.ZMP (forecast area graphic file), WISE.BPT (the breakpoint definition file), WISE.BPP (the breakpoint phrase file), WISE.ST (the state definition file), WISE.SMT (the statement definition file), WISE.CTA (the call to action file list) and call to action files (ending in ".CTA"). This menu also has an option to create the WISE.BAT (startup batch file) and other ASCII files. To allow a system manager to clear out all unnecessary files, an option is also provided to allow deletion of these files from the WISE directory. An option for deletion of daily log and practice files is also available in this menu.

The "Print menu" option allows a printout of all the configuration files listed above. It is a good idea to make printouts of all files after they are created or altered so they can be checked for correct entries.

The "Select Office" option allows the user to edit/create configuration files for any backup offices.

The "Spelling dictionary (WISE.DIC) management" option allows for the program administrator to periodically remove misspelled words from the WISE.DIC dictionary. As the dictionary grows, one of the options available in this module allows for optimization of the spelling dictionary.

Edit Options in the INSTALL Program

Edit configuration file (WISE.CFG)

From the Edit menu, selecting the "Edit configuration file" option allows you to configure both the software and hardware settings. These include communications settings, storage paths, office information, and other WISE options.

When this option is selected, you will first be prompted for normal and dial backup communication parameters. If the computer is connected to AFOS through a "COM" port (1, 2, 3 or 4), enter communications parameters in the format:

COM#:Baud, Parity, Data Bits, Stop Bits (where # is 1, 2, 3 or 4).

The remaining parameters correspond to the AFOS asynchronous line setup as determined using the AFOS "DIRECTORY:" command at an ADM. If WISE is to be configured for testing or practice on a computer where transmission to AFOS is either not possible or not desired, enter “NUL”. If transmission to AFOS is to be performed by another computer (on a LAN), specify the directory or specific file to which AFOS products must be stored (queued) for transmission to AFOS by PC-AFOS or an equivalent program.

For instance, if drive "Z:" is mapped to a shared folder named “DISKQ” on a server named “SERVER” that communicates with AFOS via PC-AFOS or equivalent software, enter "Z:\" as the path. In this example, you could alternately enter “\\SERVER\DISKQ” if no drive mapping has been made to this shared folder. If the transmitting program expects to find the file “AFOS.TXT” in this directory, you would enter “\\SERVER\DISKQ\AFOS.TXT”. If a file is specified, the filename must include “.”, even if no extension is required. On the server, ensure that appropriate permissions have been set on the shared directory so that any potential user of WISE has file create, write, and change privileges for the shared folder or file.

A new communication option available in WISEII V7 is to output the product to a printer queue for transmission by a LAN printer driver. To use this option, the LAN printer-AFOS driver must be assigned (or capture) a logical parallel (LPT) port. The correct entry format is LPT#:, where # represents a logical parallel port. Note that if a logical printer port is specified as a “communications parameter”, that printer port must not be used as a “printer device” in the WISE.CFG file.

The printer devices may be entered as LPT#: where # is a valid printer number. If the printer is a serial device, enter the asynchronous communications parameters as described above for AFOS communications. If there is no printer, enter “NUL”

When prompted for the number of times transmitted statements should print, enter a number from 0 to 9. Generally 1 or 2 is sufficient. If there is no printer connected to the PC or if the printer will not work with WISE, enter "0".

If an asynchronous connection to AFOS is not direct but rather through a peripheral sharing device (PSD), enter "Y" when asked if the computer is connected through a PSD. If the wiring is correct between the computer and the PSD (see Appendix G), this will ensure that WISE will wait until the PSD is not busy before attempting transmission, resulting in a high rate of success. When a PSD is not involved, always respond "N" to this question. Whether or not a PSD is used, it would be a good idea to see the details in Appendix H concerning running WISE under Windows.

Once the communication data entry is completed, you will need to enter station-specific data. When prompted, enter the station's city and state ID (i.e., TX)as they appear in an AFOS MND. If WISE is being used in Puerto Rico for Spanish products, respond “Y” to the Spanish MND prompt. All other locations must enter “N”.

Next, enter the station's AFOS node, WMO station ID (as appears in AFOS products after TTAA00 in WMO header) and default product designator. The default product designator is the WMO ID of the office of transmission with only a few exceptions.

When prompted for the primary time zone, enter a one-letter zone identifier that indicates which time zone the office is in (P, M, C, E, or A). If that zone switches to daylight time enter "Y" when asked; if it does not switch, enter "N". If the CWA includes a second time zone which should be included in product MND time/date line, enter a one-letter identifier for that zone when asked for the secondary time zone. If there is not a secondary zone, leave the response to this question blank. The "Del" key can be used to delete the time zone if one is present. When a secondary zone is used, you must also indicate if that zone changes to daylight time.

When prompted for the path to data files, enter a disk path where the latest version of products written using WISE are to be stored. These products are accessed when a

previous version of a product is corrected and when previous UGC selections are imported from previous versions of a product. When using PC-AFOS, it is best to use a different path than that used to store products received from AFOS. This prevents WISE from overwriting the newest version in that directory since it is not renamed nnnxxx.1 as PC-AFOS would do. Legitimate paths are path names like “C:\WISEII\DATA”, “D:\”, or “\\SERVER\DATA”. If the path specified does not exist, you will be asked if you want it to be created. The install program will not create intermediate directory paths, so the path to the new directory must already exist if the data directory creation is to be successful. Also, when the data path is on a LAN shared folder, ensure that all potential users of WISE have full access permissions. When asked for the path to WISEII.EXE, respond with the name of the directory where the program was installed (like C:\WISE). This directory must already exist. Again if this program path is a LAN path, ensure that all potential WISE users have full access rights to that directory.

If WISE is installed on a LAN, for proper operation the drive mappings for the data and WISEII.EXE paths must be the same on each computer on which WISE is to be used. For instance, if on a server “SERVER” the path “C:\WISE\DATA” is the data path (with share name “DATA”), specify “D:\” as the data path and map drive D: to the “\\SERVER\DATA directory on all computers, including the server, that run WISE from the server, or simply specify the path as “\\SERVER\DATA”.

The INSTALL program next asks for line length. Typically, an AFOS line has 68 characters. The INSTALL program subsequently asks if warning beeps are to be enabled at the end of the line when editing a product with WISE. The answer to this question is purely personal preference. Next, a hard return character is to be specified. Enter the ASCII code for any non-text character that is desired. ASCII 127 is the default. Avoid using ASCII codes 0, 4, 9, 10, 13, 26, or 27 as well as any text or punctuation characters.

The next entry determines if the transmitted real and practice products should be appended to STATMNTS.LOG and PRACTICE.LOG, respectively. Answer "N" unless these files are to be reviewed and subsequently deleted on a regular basis. These files are most useful when evaluating WISE training (PRACTICE.LOG) or reviewing statements following an event (STATMNTS.LOG).

When asked if the user should be prompted, when marine areas are involved, for the inclusion of intermediate breakpoints, answer "Y" if the user decides whether intermediate points are to be listed or "N" if that is to be determined beforehand (at locations with no adjacent marine areas, it is easiest to answer "Y"). If you respond "N" at this point, you will be asked if intermediate points are to be listed. Answering "Y" to this question results in WISE always including intermediate breakpoints in marine statements and warnings. Answering "N" indicates that only end points of selected marine areas will be listed.

Finally, when asked if the WISE.CFG file should be saved, enter "Y" to save it, "N" to make changes before saving it, or "A" to abort the edit without saving any changes that have been made. See the example entries in the box that follows (figure 1).

```
Normal communications parameters     : Z:\
Normal communications printer device : LPT1:
Dial backup communications parameters     : COM2:9600,N,8,1
Dial backup communications printer device : LPT1:
Number of statement copies to print : 0
Computer connected through PSD (not directly to AFOS) : N
City  : GOODLAND
State ID : KS
Spanish MND : N
AFOS RDC Node : TOP
Station ID    : GLD
Default product designator : GLD
Primary time zone (A,E,C,M,P) : M
Primary zone switches to daylight : Y
Secondary time zone or no entry for none : C
Secondary zone switches to daylight : Y
Path to data files : W:\DATA
Path to WISEII.EXE   : W:\WISE
Line Length (60-72) : 69
Warning beep at end of line : Y
Hard return character (ASCII) : 127
Enable logging of statements to PRACTICE.LOG and STATMNTS.LOG : N
Prompt user for inclusion of intermediate breakpoints : N
Include intermediate breakpoints : Y
Ok to save as WISE.CFG (Yes/No/Abort)? Y
```

Figure1 - Editing WISE.CFG

Attention - Further Useful Information

L 1. “State” ID entry, make sure to put the two letter state ID in this entry.

L 2. Intermediate Break Points prompt. If you answer “Y”, this will cause a prompt, “List Intermediate Break Points (Y/N)?”, to occur when you are creating a Special Marine Warning for two or more marine zones.

N NOTE: In order to successfully use this feature, the WISE.BPP, Breakpoint Phrase must be created.

To create WISE.BPP, use INSTALL.EXE, edit WISE.BPP, and enter the letter descriptors (the word “tags” was used in the original documentation) of the two extreme ends of your entire marine zone area of responsibility that are defined by break points. For instance, if you have a total of four near shore marine zones, in order that “A” is your northern most marine zone and “D” was southern most zone, then your WISE.BPP entry would be:

AD NEAR SHORE (COASTAL) WATERS OF LAKE MICHIGAN (THE GULF OF MEXICO)

Remember that the letter descriptors come from the “Marine Links” entry in the WISE.BPT file, which you created using INSTALL.EXE.

- 3. Path to Data Files: Amongst many files, this is also the location where WISE II stores the created products.

Edit zones (WISE.ZNS)

To edit zone configurations, select the "Edit zones (WISE.ZNS)" option from the Edit menu. A screen like the one in the box that follows (figure 2) will be displayed.

```
                Zone Configuration File (WISE.ZNS) Editor

Zone definition number  : 5 of 14

Location : BROWN
Cities : BROWNWOOD
Marine Link :

Time zone: C
Switches to daylight : Y
Time zone in AFOS header (space bar to toggle): Primary

UGC or GROUP# (#=0 to 9) : TXZ140      Radios : A!

   Select an option:
            Done
      %     Add new zone definition
            Delete current zone definition
            Edit current zone definition
            Next zone definition
            Previous zone definition

Click on a county/zone...
```

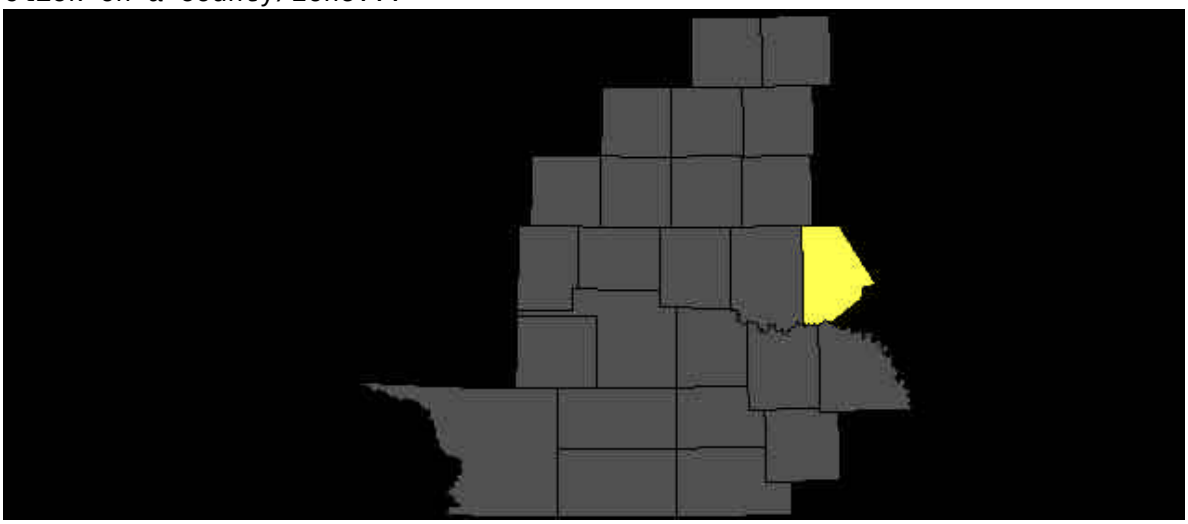

Figure 2 - Editing zone definitions (WISE.ZNS)

This screen indicates which zone definition number is being displayed as well as the total number of zones and zone groups defined in the WISE.ZNS file. Below that, the "Location" is a description of the zone as it will appear in WISE on the Zone selection screen (should not include the work “COUNTY” or “PARISH”). This can be the name of a single zone or a label descriptive of a group of zones.

A short list of cities delimited by commas may be entered after the “Cities” prompt if segmented products that include city lists in each segment (as in some Zone Forecasts and Short Term Forecasts) will be written using WISE.

The "Marine Links" line prompts for a list of those marine areas (if any) that are adjacent to the zone being defined. The links specified here take the form of alphabetical tags that have been assigned to marine areas in the WISE.BPT file (see the section on WISE.BPT for more information). These tags are not separated by any delimiting characters. For instance, if the adjacent marine area tags are “A”, “B”, and “C”, the correct entry would be “ABC”.

On the “Time zone” line, enter a single letter (A,E,C,M, or P) corresponding the time zone in which the zone is located. If daylight time is observed in the zone, enter “Y” in response to the “Switches to daylight” prompt that appears next. The "Time zone in AFOS header" line indicates whether the Primary time zone or Primary and Secondary time zones (if defined) as specified in the WISE.CFG file should be used in the MND when the displayed zone is included in a statement. In WISE, when several zones are selected and the time zone selected is "secondary", both the primary and secondary time zones will appear in the MND. To toggle between the Primary and the Primary and Secondary time zone options, use the space bar.

The "UGC or GROUP#" line indicates either a single zone UGC, like "TXZ072", or a zone group specification like "GROUP0"or "GROUPA". The number or letter following "GROUP" in a zone group specification corresponds to # in a group definition file WISE.ZG#. In other words, if "GROUP0" is specified, a UGC containing the actual zones is stored in a file named WISE.ZG0. See the item on zone groupings in the section that follows for more information.

After entering the UGC or GROUP#, you may enter a string of letters and exclamation points that indicate the radios on which products issued for the zone should be recorded and potentially alarmed on. If products for the zone are only to be recorded, enter only the letter corresponding to the radio on which products are to be recorded. If some products are also to be alarmed on that radio, append and exclamation point to the radio indicator letter. The radio letter codes are assigned to three-digit radio names in the WISE.RAD file, described later. The statement definitions specify which products are to actually be recorded on a radio console and alarmed. When a product is transmitted using WISE, the hard copy will include a list of radios on which the product should be recorded and alarmed.

Across the bottom half of the screen is a reproduction of the zone forecast area map located in the WISE.ZMP file, if it has been created. See the section on creating maps that follows for more information. The next step would be to assign an area of the map, normally an enclosed zone or county, to the zone definition the user created at the top of

the screen. All that needs to be done at this point is to click on the center of the geographic area represented by the UGC in the definition. If the yellow fills beyond the bounds of the zone area on the map, further editing to WISE.ZMP may be required to completely enclose the geographic area will a black outline. If you are defining a zone group, you will not be prompted to click on the map to associate it with a map area.

If a zone forecast area map (WISE.ZMP) has not been created, in place of the map will be a black area which will cover the bottom portion of the screen. If WISE.ZMP does not exist, you will not be asked to assign the zone to any area of the map.

A menu listing options appears after the zone information fields. Options may be selected from this menu using the cursor (arrow) keys and the <Enter> key. Alternately, the "Esc" key may be used in place of the "Done" option, the "Ins" key may be used in place of selecting "Add new zone definition", the "E" key may be used in place of selecting the "Edit current zone definition" option, the "Del" key may be used rather than selecting "Delete current zone definition", and the left and right cursor (arrow) keys can be used to increment and decrement the currently displayed zone definition number.

When you elect to add, delete, or edit a zone definition, you will be prompted to confirm the action to prevent accidental alterations. When adding or editing a definition, enter the information as prompted. When finished, you will be asked if the edits are okay or if further edits are needed; answer "O" or "E", as appropriate. Note that ***the mouse is always active in the map area of the screen*** to facilitate associating zones and counties to areas on the map. Without entering zone editing mode, a mouse click within the map area will assign the area clicked on to the currently displayed zone or county without confirmation. Use the right and left cursor (arrow) keys to thumb through zone definitions prior to storing the new WISE.ZNS file to ensure that each zone is properly matched with the corresponding area on the map.

When done altering the WISE.ZNS file, select "Done" or press the "Esc" key. If you have made any changes to this file, you will be asked if you wish to save changes, abort, or continue editing. Press "S", "A", or "C", as appropriate. Next, indicate whether zone definitions are to be re-arranged, answering "Y" or "N" when prompted. If the response is "Y", a list of zone names will appear on the left of the screen. To take a name out of the list and place it in a different location in the list, use the up and down cursor (arrow) keys to select the one to be moved, then press the right cursor (arrow) key to place it in "temporary storage". Now use the up and down cursor (arrow) keys to find the new location where the zone name is to be inserted. Use the left cursor (arrow) key to move it from temporary storage back into the zone list in front of the highlighted location. When done, press the <Enter> key. Where zone names appear in this list are where they will also be located in the zone list within the WISE program.

Edit zone groups (WISE.ZG?)

When zone groups have been identified during the WISE.ZNS edit session by entering "GROUP#" (where # is a number from 0 to 9 or letter from A to Z) as the UGC code for a zone, a corresponding zone grouping file must exist. These are named WISE.ZG#, where # corresponds to the # in the "GROUP#" specified in the WISE.ZNS file. To edit zone groupings, select "Edit zone groups (WISE.ZG?)" from the edit menu.

When this option is selected, you will be prompted for a zone group number or letter to edit. Enter a single digit number from 0 to 9 or letter from A to Z that corresponds to a group referenced in WISE.ZNS. You will be allowed to enter up to 10 lines of UGC code. Entry will terminate when the <Enter> key is pressed and the cursor is on a blank line. Each line consists of valid UGC codes as would be used in a statement issued on AFOS (like KSZ001>005-NEZ079>081-COZ090-091). It is optional to leave a dash ("-") at the end of a line. The INSTALL program will add dashes at the end of lines where they are required. Once a blank line is entered, you will be asked if the zone group just entered is to be saved, aborted, or if further edits are required. Enter "S", "A", or "E" in response, as appropriate. An example of the zone group editing screen follows (figure 3).

```
                Zone Group Configuration File (WISE.ZG?) Editor

Edit which group (0 to 9, A to Z) : 1

Enter up to 10 lines, enter blank line to end edit...
KSZ001>005-013>017-027>029-041-042

Save changes, abort, or continue editing(S/A/E)? S
```

Figure 3 - Editing zone groups (WISE.ZG?)

Edit counties (WISE.CTY)

To edit county configurations, select the "Edit counties (WISE.CTY)" option from the Edit menu. A screen like the one in the box that follows (figure 4) will be displayed.

The entries on this screen are the same as those described for the zone definitions; however, on the location line, the word COUNTY (or PARISH) should be included as part of the county name, and only valid county FIPS codes (no groups) are to be entered as UGC entries. When you have, in the same forecast area, counties bearing the same name in two different states, include the state name with each county.

```
                County Configuration File (WISE.CTY) Editor

County definition number  : 1 of 10

Location : TOM GREEN COUNTY
Cities :
Marine link :

Division of state : EC

Time zone : M
Switches to daylight : Y
Time zone in AFOS header (space bar to toggle): Primary

UGC : COC017                        Radios: A!

   Select an option:
      %  Done
         Add new county definition
         Edit current county definition
         Delete current county definition
         Previous county definition
         Next county definition

Click on a county/zone...
```

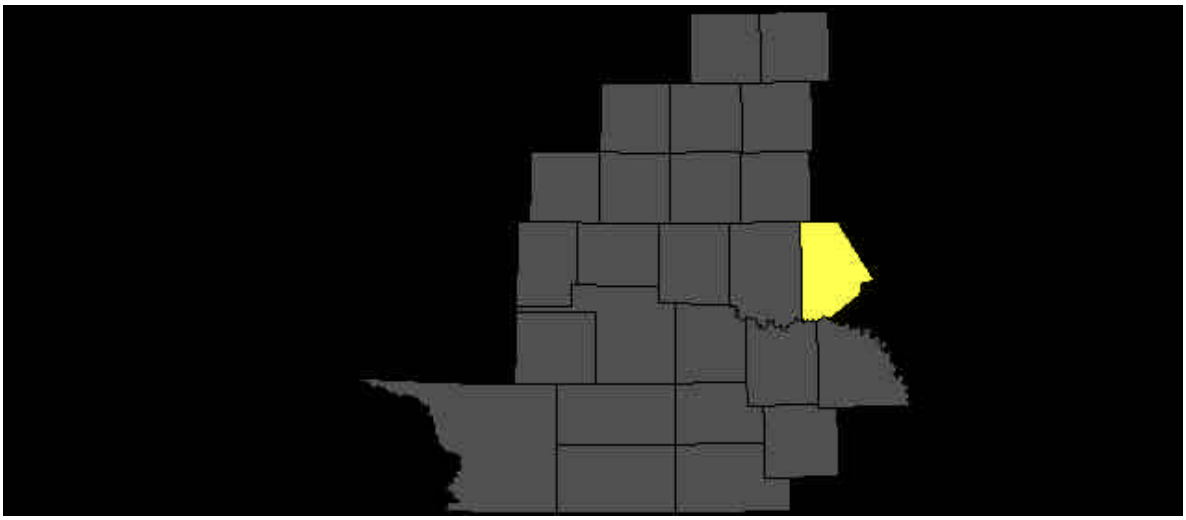

Figure 4 - Editing county definitions (WISE.CTY)

For each county, a division of the state should also be specified. This is a one or two letter geographic division (NW, NC, NE, WC, C, EC, SW, SC, SE, M or P). M represents “middle” (i.e. middle Tennessee), and P represents "panhandle". The county definitions also require time zone information specific to the county being defined. When a county is

added or edited, enter "P", "M", "C", "E", or "A" for the time zone and answer "Y" or "N" when asked if the county changes to daylight time.

Across the bottom half of the screen is a reproduction of the county warning area map created by the user and stored in the WISE.CMP file. See the section on creating maps that follows for more information. Similar to the steps followed in the WISE.ZNS setup, the next step would be to assign an area of the map, typically an enclosed zone or county, to the county definition the user created at the top of the screen. All that needs to be done at this point is to click on the center of the geographic area represented by the UGC in the definition.

If a county warning area map (WISE.CMP) has not been created, in place of the map will be a black area which will cover the bottom portion of the screen. When WISE.CMP does not exist, you will not be prompted to click on the map.

Aside from specifying the county's state geographic division, changes to the WISE.CTY file are accomplished in exactly the same way as described in the preceding section outlining how to change WISE.ZNS. However, do not enter a group specification in place of a single county FIPS code on the line requesting the UGC, as this is available only for zone definitions. Refer back to "Edit zones" for more details.

Create Maps (WISE.CMP, WISE.ZMP)

L 1. While WISE II has greatly improved its MAP interface, the functional interface is not required to successfully use WISE II. Today, the creation of the maps are very easy and for most offices it takes about 2 to 4 hours to create all of the necessary maps manually, and somewhat less time using the WISEMAP.EXE utility. It’s strongly recommended, that after the maps have been created you backup your work!

N NOTE: A preferred method to manually create maps (not the only way!), is to create the two maps using the INSTALL.EXE program. Edit WISE.CMP first for your County Warning Area (CWA). If you have marine zones, draw both your near shore (coastal waters) and your “open waters” marine zones on the County Map. Then, at the DOS prompt, copy WISE.CMP to a new file named WISE.ZMP.

N NOTE: If your CWA is configured such that your County and Forecast zones are not the same, use INSTALL.EXE, edit

WISE.ZMP, and “Paint” over the existing County Lines...DO NOT “Paint” over the existing marine zone lines! Draw your forecast zone lines and “Save”.

Once you have created your two maps, it’s time to use INSTALL.EXE, edit WISE.ZNS, WISE.CTY, and WISE.BPT files.

N NOTE: When you are editing the WISE.BPT file you will notice that you are asked to “click” on the same zone twice. What’s really happening here, is that you are defining the marine zone on both the Zone Map (WISE.ZMP) and the County Map (WISE.CMP).

L 2. An alternative to drawing your County and Zone maps is to use the WISEMAP.EXE utility and the County and Zone outline files provided by NWS Office of Meteorology’s anonymous FTP site at

ftp://www.nws.noaa.gov/modernize/zones

This FTP site can be browsed using an Internet browser or accessed by an FTP utility. There are files (ending in .BNA) at this location for each state, and each file contains both county and zone outlines. Download the files for all states for which your office has responsibility (including backup responsibility) and then concatenate those files into the file WISEMAP.SRC in the directory where you have installed WISE. This can be done with the DOS command **copy *file1+file2+file3*+... WISEMAP.SRC**. Then run WISEMAP. To construct your office’s maps, run WISEMAP with no arguments. To construct maps for backup offices, the station ID of the backup office is entered as a command line argument (i.e., WISEMAP GLD).

N NOTE: If WISEMAP.SRC does not exist in the same directory as WISEMAP.EXE (your WISE directory), the program will provide execution instructions. Further instructions are also located in the original WISE V6 documentation. A caveat to using the WISEMAP program is that the WISE.CTY and WISE.ZNS files must exist prior to running WISEMAP.EXE.

A graphical representation of your county warning area (CWA) or zone forecast area (ZFA) may be created either manually using the INSTALL program or automatically using the WISEMAP program. When WISEMAP is used, some editing using the INSTALL program

may be required to add marine areas or make corrections to the map if the map database is flawed.

If the WISEMAP utility is used to create the initial maps, the file WISEMAP.SRC must first be created in the directory from which WISEMAP is run. This file may be created by appending those files that may be obtained from the Internet site "ftp://www.nws.noaa.gov/modernize/zones" that apply to the area to be mapped using the DOS "COPY" command (i.e. COPY txw-zone.bna+nm-zone.bna WISEMAP.SRC).

To use the WISEMAP utility, the path to the directory containing existing WISE.CTY and WISE.ZNS files must be specified unless these files are in the current directory. If WISEMAP.EXE and WISEMAP.SRC are located in the main WISE directory, the home location map files can be produced by going to the WISE directory and entering "WISEMAP" at the DOS prompt. For backup location maps, go to the WISE directory and enter "WISEMAP xxx", where "xxx" is the backup directory containing the backup location WISE.ZNS and WISE.CTY files.

When the program runs you will be asked whether you wish to enter top, bottom, left and right pixel offsets. When you enter "Y", WISEMAP will prompt for each of these offsets. Unless marine areas will be edited onto the map using the install program, there should be little need to specify offsets as the program sizes and centers the graphic automatically.

Though WISEMAP can create the WISE.CMP and WISE.ZMP files, it will not place zone or county centroids. Once the maps are produced, you must edit WISE.CTY and WISE.ZNS to place county and zone centroids manually.

To edit WISE.CMP or WISE.ZMP using the INSTALL program, choose "Edit county map (WISE.CMP)" or "Edit zone map (WISE.ZMP)" from the WISE Installation/Configuration menu. The format of the zone and county maps is the same, so it may save time to create the county map (WISE.CMP) and copy it to the zone map (WISE.ZMP). If you create marine area representations on these maps, the **Marine breakpoints** must be drawn on both the county and zone maps.

The easiest method to prepare a map of your CWA or ZFA, aside from using the WISEMAP program, is to use a transparency attached to the computer screen, overlaying the gray area in the upper portion of the graphics screen.

When using the INSTALL program to edit the county and zone map files, upon entering the WISE.CMP or WISE.ZMP file, a small menu box with 10 options will be located in the lower portion of the screen while the drawing area comprises the upper portion. The drawing area is gray, enclosed by a white box (figure 5).

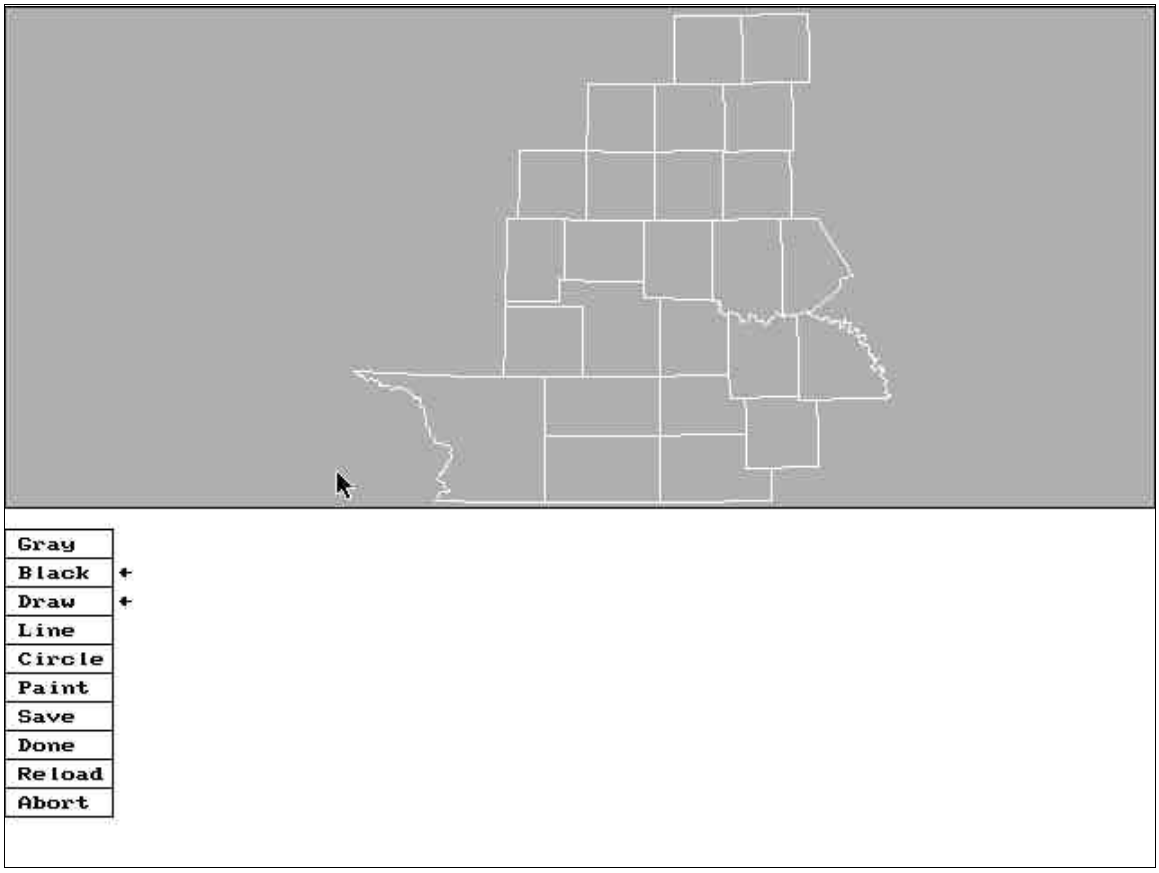

Figure 5 - Editing county and zone maps (WISE.CMP & WISE.ZMP)

Using the transparency, trace a map in black using the editing features. For straight lines, select line from the menu. For non-linear county lines, rivers, terrain...etc., select draw. Line thickness and color are not adjustable. Use the combination of gray and either line or draw to erase lines.

Frequently saving the file is a must. At any time during map construction, you may click on "reload" to load the previously saved map onto the desk top, and erase any changes since the last save was performed. Clicking on "abort" will exit the file and take the user back to the install menu.

After completing the CWA or ZFA outline, use the black circle feature to add independent cities which possess their own FIPS code. Marine areas should be added to the CWA and ZFA map while cities should be added only to the CWA map.

As a matter of convenience when tracing the ZFA and CWA from transparency, it is a good idea to create the county map (WISE.CMP) first and then copy the file to the zone map (WISE.ZMP). However, this method assumes your CWA and ZFA are identical. For Milwaukee/Dousman (MKX), Detroit/White Lake (DTX) and Chicago/Romeoville (LOT), the ZFA still encompasses much of their respective states. Once MAR is complete, the CWA and ZFA will be the same for each of these offices. Until then, set up a backup directory for the home office (MKX, DTX, or LOT). In this way, a different map could be used to represent the ZFA while the main WISE directory contains the graphic pertaining to the CWA.

Upon completion of the map, click on "save", and then "done" to exit the county or zone file.

Proceed to editing the WISE.ZNS, WISE.CTY and WISE.BPT (if needed). You will need to edit every geographic location in each of these files. For each location, you will need to click on the center of the geographic area represented by the UGC.

Edit breakpoints (WISE.BPT)

Editing the breakpoints file (WISE.BPT), which defines marine areas, follows generally the same steps required for entering county definitions; however, a state geographical division is not used. Also, rather than entering a county name, enter the name of the breakpoints that bound the marine area on either side, “Breakpoint 1" and “Breakpoint 2", and provide the UGC that applies to that marine area. When the marine area being defined is an inlet, bay, or similar body of water, enter the name of that body of water as “Breakpoint 1" and leave the “Breakpoint 2" entry blank. For marine areas with no assigned UGC, enter “xxxNIL” (i.e., GMZNIL).

Each marine area definition must have a marine link tag, specified by an alphabetical character). There a few rules that apply to the method by which marine areas are assigned tags:

1. Each marine area must have a unique tag.
2. Marine areas that are connected, spanning a coastline, must have serially assigned marine area tags. For example, if there were four marine areas along the coast, they might be assigned tags “C”, “D”, “E” and “F” (in geographical order).
3. Inlets, bays, and individual lakes must have marine area tags that come neither immediately before or immediately after any other assigned marine link tags. For instance, if a stretch of coastline defined by marine areas tagged “A”, “B”, and “C” opened up into a bay, that bay could be assigned a tag of “E”, though not “D”.

4. Open water zones must be assigned tags that are alphabetically after the other marine link tags.

To expedite assigning marine links, it would be useful to sketch a rough map of all marine areas to be entered in WISE.BPT. Once all marine areas are drawn, assign a marine link tag to each marine area on the map using the rules above.

Once the marine link tag has been assigned, answer "N" to the "Marine area bound by breakpoints?" prompt, unless the marine area being defined is not bound by two points (i.e., bays, inlets, etc.).

Lastly, the program displays the maps created in the WISE.ZMP and WISE.CMP files. You are asked to click on the marine area that you are defining. You will need to click on two maps - once on ZFA map and once on the CWA map. If no map has been created in either the WISE.CMP or WISE.ZMP files, the lower portion of the screen will appear black, and you will not need to click on any either of these maps.

Once editing of WISE.BPT is complete, select "Done". As in the case of the WISE.ZNS and WISE.CTY files, you are given the opportunity to rearrange the order of marine areas within the WISE.BPT file. Unlike the zone and county definition files, however, the order of marine area definitions in WISE.BPT is meaningful. Be sure to adhere to the following rules when ordering marine areas in WISE.BPT:

1. Marine areas must be listed WISE.BPT such that the marine area tags are in alphabetical order.
2. Marine areas that are along coastlines are first in the file, and marine areas that lie along a line geographically are defined within this file in the same order.
3. Marine areas that define distinct bodies of water come after marine areas that define stretches of coastline.

If these rules are not carefully followed, results may be unpredictable. An example of the breakpoint editing screen follows (figure 6).

```
              Breakpoint Configuration File (WISE.BPT) Editor

Breakpoint definition number  : 1 of 5

Breakpoint 1 : BONNY POINT
Breakpoint 2 : CAPE FEAR

Time zone : C
Switches to daylight : Y
Time zone in AFOS header (space bar to toggle): Primary

UGC : COZ500
Marine area bounded by breakpoints (Y/N): N                    Radios: A!

   Select an option:
         Done
         Add new breakpoint definition
      %  Edit current breakpoint definition
         Delete current breakpoint definition
         Previous breakpoint definition
         Next breakpoint definition

Click on a county/zone...
```

Figure 6 - Editing breakpoints definitions (WISE.BPT)

Once the marine area definitions are complete, using the marine area map, that you sketched earlier to help you edit the WISE.BPT file, edit the county and zone definition files to add marine links to counties and zones that should have marine areas or open water

zones associated with them. Marine areas should typically be associated with any adjacent counties and zones.

L What happened to "Open Waters" in the INSTALL.EXE program's WISE.BPT file? When WISE II was created there was a need to express a few marine areas in terms that were not alpha-numerical zone codes, and this entry was added to allow for this situation. Today, most areas that we provide forecasts and warnings for have some type of alpha-numerical code definition, so the "Open Water" prompt was replaced with the prompt "Marine area bound by breakpoints?". The response to this prompt is "Y" for along-shore marine areas that are defined as being between two breakpoints. A response of "N" is appropriate for marine areas that are not defined by breakpoints, including bays, inlets, and open water areas. Since the functionality of this setting has changed, review of this entry within WISE.BPT is strongly suggested to ensure correct output from WISE.

N NOTE: For the Great Lakes, while editing the marine break points in the WISE.BPT, you should define the open waters of Lake Michigan in the same manner that you would define the near shore zones e.g.,

Breakpoint 1: MICHIGAN WATERS OF LAKE MICHIGAN
Breakpoint 2: {no entry, left blank, hit return}
Marine Link: E

To make sense, the previous example in Item 2 defined the near shore links A through D. The WISE.BPP does not have an entry that includes marine link E.

Edit breakpoint phrases (WISE.BPP)

To better support offices with marine responsibility, WISE can be set up to specify the bodies of water that each marine area is a part of. This information may then be used by WISE templates to produce properly worded marine statements and warnings. To define these breakpoint phrases, edit the breakpoint phrase file (WISE.BPP). Read about demise of open waters in the previous section describing WISE.BPT.

Up to 10 breakpoint (or marine area) phrases may be defined. Each definition consists of two fields. The first field is a two-letter field that identifies the range of marine links tags that correspond to the body of water. For instance, if the marine areas corresponding to

marine links “A” through “F” are all a part of the body of water being defined, the first field would be “AF”.

The second field is a description of the body of water that the marine areas represented by the marine link tags entered in field 1 belong to (i.e. “TEXAS GULF COAST”). Up to 10 breakpoint phrases can be entered into the WISE.BPP file. Enter blanks rather than marine area tags in field 1 to end your edit session.

It is important to note that there should not be redundancy between the WISE.BPP and the WISE.BPT files. Individual entries in WISE.BPT are subsets of the bodies of water described in the WISE.BPP file. This being the case, distinct bodies of water (like bays and inlets) do not have or need entries in the WISE.BPP file.

Edit states (WISE.ST)

Each state that is referenced in a zone or county (not breakpoint) UGC must be entered in the WISE.ST file. To do this select the "Edit states (WISE.ST)" option from the Edit menu. When this is done, a screen like the one that follows (figure 7) will appear.

```
                          States File (WISE.ST) Editor

Enter up to 10 states, enter blank state ID to end edit.

State ID       State Name

KS             KANSAS
NE             NEBRASKA
CO             COLORADO

Save changes, abort, or continue editing(S/A/E)? S
```

Figure 7 - Editing states (WISE.ST)

On each line, enter the two-letter state identifier and then press <Enter> to move to the "state name" column. Then type the state name followed by the <Enter> key. As many as 10 states may be entered. The order in which states are entered is irrelevant. Terminate state entry by pressing the <Enter> key on a blank line. As with the other files, you may then indicate if you wish to save, abort, or make more edits by responding "S", "A", or "E", as appropriate.

Edit call to action file data (WISE.CTA) & (*.CTA)

In order to create and customize the user-selectable call to action statements available in WISE, select the "Edit call to action file data (WISE.CTA) & (*.CTA)" option from the edit menu. When this is done, a screen like the one that follows (figure 8) will appear.

```
Call to action categories:

   A. THUNDERSTORMS
   B. SEVERE STORM
   C. FLOODING
   D. TORNADOES
   E. WIND & DUST
   F. FOG
   G. HEAT
   H. COLD
   I. WINTER WEATHER
   J. STAY TUNED
   K. NAMES

   Select an option:
         Done
      %  Add a new category
         Delete a category
         Edit a category
```

Figure 8 - Editing call to action statements (WISE.CTA) & (*.CTA)

Each currently defined call to action statement category is listed next to a letter that is used to identify each category during deletion and edit functions. When the "Add a new category" option is selected or the "Ins" key is pressed, a prompt will appear requesting a new category name. The program will construct a file name using the first eight letters of the category you enter, so use unique, relatively short, meaningful names. The newly created category will be added to the list.

To edit a currently defined category, select the "Edit a category" option or press the "E" key. When this is done a prompt will ask for the letter of the call to action category to be edited. When a letter within the prescribed range is entered, a screen outlining the basic rules for creating call to action statements will appear. These rules are:

1. Each new call to action statement in the category file must begin with a period.
2. Each call to action category file may have up to 120 lines.
3. Up to 30 call to action statements are allowed per file.

4. Each call to action statement may be up to 12 lines.

Once a key is pressed, the instructional screen is cleared and the edit screen appears. Help on using the editor is available by pressing ALT-H. More information on the editor is also provided in Appendix A.

To delete a category, select the "Delete a category option" from the menu or press the "Del" key. When this is done, you will be asked if you are sure. If you indicate "Y", a prompt requests the letter corresponding to the call to action category you wish to delete. At that point, simply enter the letter of the category to be removed. If you enter a category letter that does not exist, nothing will happen. When the category is deleted, its entry in the category list is removed; however, the actual call to action category file remains, allowing the category to be easily restored at a later time. This can be useful if seasonal changes to the category list are made.

When finished editing the call to action files, select "Done" or press the "Esc" key. Once again, if any categories were added or deleted, you must indicate if you wish to save changes, abort, or continue editing by entering "S", "A", or "E", respectively.

Edit statements definition file (WISE.SMT)

The statement definition file determines the nature of every product WISE is configured to produce. With the many options that are available for each statement, a wide range of products may be produced. Even though a statement definition file is provided with WISE, it must be edited to change at a minimum the product designator part of the AFOS key (which is, for many products, the issuing station's identifier). To edit the statement definition file, select "Edit statements definition file (WISE.SMT)" from the Edit menu. Reference the example that follows (figure 1) for a sample look at this screen.

L Since the change in short fused warning format, the bullet warning format, the WISE.SMT file specifies the template file (.TPL) that is to be used to generate the warning text. The templates provided for this purpose are SVRB.TPL, TORB.TPL, FFWB.TPL, and SMWB.TPL. If the WISELOC.EXE program is used with WISE to generate a pathcast in those warnings, the SVRBL.TPL and TORBL.TPL templates should be specified instead. If WISELOC.EXE is being used, the WISELOC.DAT file will also need to be changed to include [VERBOSE] and [BULLET] sections.

```
                Statement Configuration File (WISE.SMT) Editor

Statement definition number  : 1 of 24[1]                    Label : SPS[2]
Statement menu item name : SPECIAL WEATHER STATEMENT[3]

MND Line 1 (Bulletin):
NONE[4]
MND Line 2            :
SPECIAL WEATHER STATEMENT[5]
VTEC Coded: N[6]             Goes on NWR : Y[7]          Alarm on NWR : N[8]
Node: TOP[9]                Category: SPS[10]            Designator : GLD[11]
Default addressee : ALL[12]   Default expiration:[13]
UGC : Z[14]
Segmented : N[15]  County list : N  City list : N  Time/date : N  Ordered : N
Add a call to action : Y[16]    Query for storm reports : Y[17] Send Page :N[18]
Preformat (PFT), run file (EXE,COM, or BAT), or template (TPL):HEADER.PFT[19]

   Select an option:
            Done
            Add new statement definition
            Delete current statement definition
            Edit current statement definition
      %     Next statement definition
            Previous statement definition
```

Figure 9 - Editing statement definitions (WISE.SMT)

As with the other configuration files, select "Done" or press the "Esc" key when finished editing the file. You will then be asked if you want to save the changes, abort the edit without saving changes, or return to editing. Respond "S", "A", or "E", as appropriate. If you enter "S" when no changes have been made, the program asks if the statement order is to be changed. If so, enter "Y". Simple instructions for changing the order of the statements is provided at the bottom of the screen (the procedures are the same as those described previously for changing the order of zones, counties, and breakpoints in their respective configuration files).

To add a new statement definition to the list, either select "Add new statement definition" or press the "Ins" key. To edit an existing statement definition, choose the statement definition to be changed by selecting either the "Previous statement definition" or "Next statement definition" options until the desired definition is displayed on the screen. Alternately the right and left cursor (arrow) keys can be used to do the same thing. Then select the "Edit current statement definition" option or press the "E" key.

A description of each statement definition field (see figure 1) follows:

1. The "Statement definition number" shown at the top of the screen is not changed during the statement edit since it is assigned by the install program. It does indicate where in the list the statement is currently placed. The statement may be moved elsewhere in the list once statement definition file changes are complete.

2. The "Label" can be any six (or fewer) letters that uniquely identify the statement. When a WISE user presses “F3" to display a list of statements in effect, the label you enter in this field is used to identify the statements in the list.

   This label can also be used in the WISE command line to cause WISE to default directly to this statement type (see the WISE command line options later in the documentation for more details).

   If this statement is to be listed in a statement summary header (HEADER.PFT) in other products, suffix the label with "!". Note that practice products will not include listings of practice products longer include this file.

3. The "Statement menu item name" is the name of the statement as it will appear in the WISE statement menu and does not control what appears in the product.

4. "MND Line 1 (Bulletin)" is reserved for lines beginning with "BULLETIN" that precede the product name line in some statements. On this line, enter exactly what bulletin line should come before the product name. If no bulletin line is used, enter "NONE". Current practice is to use "BULLETIN - EAS ACTIVATION REQUESTED" in all TOR and FFW warnings. Subject to local agreements, the phrase "BULLETIN - IMMEDIATE BROADCAST REQUESTED" is normally used with all SVR warnings.

5. The "MND Line 2" entry is for the product name as it appears in the MND of the product. If the product does not have an MND, enter "NONE". If the user is to enter the MND at the time of product creation, enter "USER".

   For combined warnings like tornado and flash flood warnings that have different expiration times for the two warning types, enter the MND in the format "X(Y)WARNING". For instance, the tornado and flash flood warning would be "TORNADO(FLASH FLOOD)WARNING". This tells WISE that two separate expiration times should be selected by the user. The UGC will use the expiration time of the longer warning.

6. The “VTEC Coded” option has been added to support VTEC coding in the future. As of WISE V7, all statements should be configured not to include VTEC coding. Development of this feature within WISE is not complete.

7. The “Goes on NWR” field specifies whether the product is normally placed on an NWR console. If “Y” is specified in this field, WISE will list at the end of the product hard copy a list of the radios on which the product should be recorded and played. For products that use a UGC, only those radios that served the selected zones, counties, or marine areas (as configured in the WISE.ZNS, WISE.CTY and WISE.BPT files) will be listed. The radio names are defined in WISE.RAD.

8. The “Alarm on NWR” field specifies whether the product is alarmed on an NWR console. If “Y” is specified in this field, WISE will list at the end of the product hard copy a list of the radios on which the product should be recorded, alarmed and played. For products that use a UGC, only those radios that serve the selected zones, counties, or marine areas with the tone alert (as configured in the WISE.ZNS, WISE.CTY and WISE.BPT files) will be listed. The radio names are defined in WISE.RAD.

9. The "Node" is the three letter identifier used to enter the AFOS regional distribution circuit (RDC). Enter CCC if the node is the same as the AFOS node specified in the WISE.CFG file. If the node needs to be entered by the user at the time of transmission, enter “---” in place of a node.

10. The "Category" would be the product identifier such as TOR for a tornado warning or WSW for a winter storm watch.

11. In most cases the "Designator" is the station ID of the issuing office. When building station backup files, this ID is the ID of the station for which backup is to be provided. Some products could have other product designators (such as KS for the TOPSWSKS product). You may enter XXX to use the default product designator specified in the WISE.CFG file. Doing this and entering CCC for the node make your WISE.SMT file suitable for copying to backup location directories with few changes. If the product designator needs to be entered by the user at the time of transmission, enter “---” in place of a product designator.

12. The "Default Addressee" is the AFOS addressee that is to be used in the AFOS communications header. Some valid addressees are "ALL", "DEF", "C", "S", "CS", "000", "LOC", or "xxx" (where xxx is a station ID).

13. The "Default expiration" is used if the user desires a set relative or absolute expiration of a product. If a relative expiration is desired, enter +HHMM. If an absolute expiration is desired, enter HHMM. For example, the product MSPNOWMSP can be set to expire four hours after issuance (+0400) or at 16z (1600) for every issuance. No entry is required or in most cases even desired.

    The Default Expiration may alternately indicate the degree of expiration time rounding that is performed. When this field is blank, by default WISE will round the expiration time of the product to the next whole 5 minutes of the hour. If a 1 or 2 digit number is specified in this field, WISE will round the expiration time forward to the next interval of that size.

    For instance, if it is 1:32 PM, the user selects a 0:30 valid time for the product, and the rounding interval is set at 15 minutes, WISE would calculate an expiration time of 2:15 PM.

14. The "UGC" line specifies which UGC files are to be listed. If no UGCs are to be manually selected for the product, leave this line blank; otherwise, enter "C" for counties, "Z" for zones, or "B" for breakpoints. A combination of these letters may also be specified (for instance, "CB").

15. In the “Segmented” field, respond “Y” to allow the product to be composed as a segmented (multi-group) product.

    Enter “Y” in the “County list” field if a list of selected zones or counties should appear after the UGC/VTEC in each forecast group. If county listing is enabled, counties will appear after the UGC/VTEC code and counties will be separated by “-“.

    Enter a “Y” in the “City list” field if a list of some cities (as defined in WISE.ZNS and WISE.CTY) included in the area should appear after the UGC/VTEC and after the county list (if included) in each group. If the city list is included, it will be prefixed by the phrase “INCLUDING THE CITIES OF” and individual cities will be separated by “...”.

    Enter a “Y” in the “Time/date” field if a time/date group goes after the UGC in each product segment. These features exist in support of multiple-group products including Zone Forecasts and Short Term Forecasts.

    For products, like the NPW and WSW, whose segments are to be ordered according to the content of the segment (in the order CANCELLATION,

WARNING, ADVISORY, WATCH), respond “Y” to the “Ordered” prompt. For any other segmented product, enter “N”.

16. When "Y" is entered in the "Add a call to action" field, the user will be given a chance to select call to action statements from the call to action files. If a statement type does not use call to action statements or if a call to action is present in a template or preformat specified for the product, place "N" in this field. For both segmented and unsegmented products, WISE will put selected calls to action after the last text of the product. Thus, for segmented products it is not suggested that call to action selection be enabled.

17. A "Y" next to "Query for storm reports" indicates that the user should be asked if storm reports are contained in the statement (a positive response causes an ampersand ("&") to be placed at the end of the product to flag the presence of a severe weather report).

18. Offices may construct either a WISEPAGE.BAT or WISEPAGE.EXE program specific to office needs to allow dissemination of warning information using telephone pagers. When either of these files exists in the WISE directory, an additional option of sending a message to AFOS and Pager appears on the WISE product transmission screen. Selecting this option results in transmission to AFOS followed by running of the WISEPAGE program. Offices will need additional information to implement a paging program. The product is copies to the “LAST.LOG” file in support of this functionality.

19. The preformat, run file, or template entry determines what, if any, text should be supplied as the default basis of the statement. Enter "NONE" on this line if no default text is to be supplied.

    Files ending in ".PFT" are copied verbatim into the basis. If "HEADER.PFT" is specified, a list of statements or warnings in effect is created and loaded as the preformat. Only those statements whose label ends in "!" are listed. This feature is no longer included in practice mode.

    When an executable file is specified, it is run by WISE prior to the product edit screen. The specified program is expected to return a file having the same name but with a ".TXT" suffix to the WISE directory. This file is then copied into the BASIS statement in the same way as a ".PFT" file.

    When a template is specified, the default basis statement is composed of a combination of text from within the template and information entered by the

user. See Appendix B for details regarding the use of templates and preformats.

When composing statements for backup locations, WISE first looks for templates and preformats in the current directory. If the template or preformat is not found in the backup directory, WISE will then look in the WISE program directory for the file. This allows backup directories to have preformats and templates that are named the same as "home" location but have location-specific functions.

Editing NWR ID's (WISE.RAD)

The WISE.RAD file associates up to 15 NWR ID letters (A-O) with three letter identifiers (i.e. SJT). When editing the WISE.BPT, WISE.ZNS, and WISE.CTY files, rather than having tp enter three-letter ID's for each radio that covers each geographic area defined in these files, you will enter a string of ID's that represent those radio transmitters. This file is edited in much the same was as the WISE.ST file. To simplify editing WISE.BPT, WISE.CTY, and WISE.ZNS, it is advantageous to print out a listing of this file so that the letter-radio associations are available for reference.

L The information for NWR broadcast hard copy annotation is found in two files, the Statement Configuration File WISE.SMT, and in the Weather Radio List WISE.RAD. In the WISE.SMT there are two questions for the setup of a statement to be annotated.

N NOTE: In WISE.SMT choice # 1 is "Goes on NWR", and Question # 2 is "Alarm on NWR". If for choice # 1, "Goes on NWR", you have responded "Y", then the printed hard copy is created with the NWR letter ID annotation from the WISE.RAD file. The letter is not transmitted to AFOS. If for choice # 2 "Alarm on NWR" you have responded "Y", then the printed hard copy is created with the NWR letter ID from WISE.RAD, followed by an exclamation mark "!".

Editing WISE.BAT

WISE.BAT is the file that should be run to execute WISE. It should contain any commands required to properly configure the computer to run WISE. By default, the WISE.BAT file looks like:

```
@ECHO OFF
CLS
DATE
TIME
C:
CD\WISE
WISEREC.EXE  (Optional)
WISEII.EXE %1 %2 %3 %4
```

The DATE and TIME lines are suggested to ensure that the computer's time is correct. If it is not, the user has the chance to update it. The WISEREC.EXE program, if included, allows for the recovery of products lost during editing. The WISEII.EXE line provides for switches that are passed to WISE. Any commands required to properly configure the computer, including drive mappings in the case of a LAN installation, for successful use of WISE should be inserted into this file before the WISE.EXE line. For information on the INSTALL editor, see Appendix A. The DOS editor may also be used to change WISE.BAT.

Making WISE accessible from DOS

Though it is a good idea to have WISE accessible through the use of a menu program or Windows, it is advisable to also make WISE easily accessible from DOS. One way to do this is to place the WISE batch file in the DOS search path. Another way to make WISE accessible from any directory in DOS without adding the WISE directory to the DOS "path" is to use a DOSKEY command in the AUTOEXEC.BAT file similar to the one below:

```
DOSKEY/INSERT WISE=C:$TCD\WISEII$TWISE.BAT $*
```

This DOSKEY command activates DOSKEY, defaults the DOS command line edit mode to insert and assigns a string of commands to the **WISE** DOSKEY macro. When a user types "WISE" at a command prompt, the WISE.BAT batch file in the \WISEII directory on drive C: will be run. Any command line parameters will be passed by the DOSKEY macro into the WISE batch file.

Making WISE accessible from Windows

For your convenience, WISE.ICO and WISE.PIF files are available as part of the full install to assist in the setting up of a WISE icon in Windows. In Windows, the shortcut or icon should be linked to WISE.PIF rather than WISEII.EXE. Also, the WISE.PIF must be edited for the correct program file if other than “C:\WISE\WISE.BAT”

Other WISE batch files and command line options

WISE accepts a few command line options. They are summarized below. Unless the "/P" switch is added, WISE will be in "WARNING/STATEMENT" mode by default. The command WISEII.EXE/N/P would be ideal in a batch file created for WISE practice. When the "/L" switch is used, WISE will bypass the statement type selection screen and automatically select the statement whose label matches the label supplied in the switch. For routinely issued products, the command WISEII/N/L*label* could be used. When either the "/N" or "/D" switch is in the command line, the first WISE screen is bypassed. Unique batch files for producing various routine products might be created using WISE.BAT as a guide.

/D	Default WISE to the dial backup or secondary communication mode
/N	Default WISE to the normal or primary communication mode
/P	Default WISE to practice mode
/L*label* or /L=*label*	Select the statement whose label is *label*

Editing ASCII files

From the edit menu, you may select "Edit an ASCII file" to edit text files. This utility may be used to edit preformats, templates, or batch files. These files may also be edited using the DOS editor. See Appendix B for information on editing preformats and templates.

Deleting non-essential, statement and daily log files

In order to get rid of files cluttering up the WISE directory that are not required (temporary work files), select from the Edit menu the options "Delete all non-essential files" and "Delete statement and/or daily log files". When this is done, you are prompted to verify your choice. The statement and practice log files will be created if this feature is enabled in the station's WISE.CFG file. The main purpose of these delete options is to delete erroneous files, the PRACTICE.LOG and STATMNTS.LOG files and temporary files (like ".TXT" files, including WISE.TXT) to make copying the program and configuration files to other computers easier.

Print options in the INSTALL program

To make listing of configuration files easy, the INSTALL program provides utilities for printing out all of the configuration files used by WISE. To get a listing of print options, select from the main menu the "Print menu" option. After one of the options is selected from the "Print menu", the user is asked to press a key when ready to print.

When the "Print call to action file (*.CTA)" option is selected, the user must first specify the letter corresponding to the category that should be printed. The user can also select an option that would print out all call to action files in WISE.CTA.

When "Print an ASCII file" is selected, the user is prompted for the name of the file to be printed. Any valid ASCII file name can be specified whether created using the INSTALL program or the DOS editor.

Configuring backup office files in the INSTALL program

From the WISE Installation/Configuration main menu, use the "Select Office" option to create configuration files for offices requiring occasional backup service. The user will then be asked to choose a backup office or return to the home office file configuration. If choosing a backup office, the user will be prompted to create a backup office subdirectory, which must be named the same as the station ID. The current location display at the top of the screen will change to reflect the choice of a backup office. Each backup office will need at a minimum the following files: WISE.CFG, WISE.ZNS, WISE.CTY, WISE.ST, WISE.CTA and WISE.SMT. If desired or required locally, the WISE.ZMP, WISE.CMP, WISE.ZGx, WISE.BPT, and WISE.BPP files can be created.

Editing the spelling dictionary using the INSTALL program

The spelling dictionary used by WISE should be periodically optimized or corrected. A utility is provided in the INSTALL program to allow for changes to the dictionary file (WISE.DIC). One way to eradicate misspellings is to print the contents of WISE.TXT, which is a list of newly added words, and examine the list for misspellings. Once misspelled words are identified, the Dictionary Optimization Module can be run from the main menu by selecting the "Optimize dictionary for maximum efficiency" option.

Checking the efficiency rating of the dictionary file

To determine if the dictionary needs optimization, select the "Show efficiency rating" option from the Dictionary Optimization Module. The program will list available files and prompt

for the name of the file to check. WISE uses the WISE.DIC file by default. Any other dictionaries listed are personal dictionaries. Once a valid file name is entered, a list of all words in the chosen file will scroll down the screen. At the end of the list several statistics are displayed, including the number of words in the list.

Here is a brief description of the other statistics:

1. The "Average Actual Depth" is how far down each of the 26 (one for each letter of the alphabet) binary trees branches, or how deep they are, on average.

2. The "Optimal Binary Tree Depth" is how deep a single optimal (well balanced) binary tree would have to be for the number of words in the current dictionary.

3. The "Binary Tree Relative Efficiency" is a ratio comparing the depth of an optimized binary tree to the actual "Enhanced" binary tree. This ratio is comparable to the ratio of time requirements between a single binary tree and the WISE enhanced binary tree structure.

4. The "Optimal Enhanced Binary Tree Depth" is an indication of how deep each of 26 balanced binary trees would have to be to hold all the words in the dictionary.

5. The "Enhanced binary tree efficiency" indicates how close the actual dictionary structure is to being perfectly balanced. While the other numbers are neat "Gee, Whiz!" values, this one indicates if optimization of the dictionary should be performed. Until a dictionary exceeds 10,000 words, it is unlikely that better than 80 percent can be expected. The dictionary should generally be at least 65 percent efficient - if not, optimization is suggested.

Optimizing the WISE dictionary

From within the Dictionary Optimization Module, select "Optimize dictionary for maximum efficiency". When this is done, a list of available dictionary files is displayed. Enter the name of one of these files. The program then lists all words in the dictionary as well as the efficiency statistics as described in the preceding section. WISE will then prompt for a key press to continue optimization. Upon continuation, each word is placed back in the dictionary in an optimized position. As each word is added, it is shown on the screen.

Following optimization, a complete listing of words in the dictionary is made and statistics on the optimized dictionary are printed for comparison. If the "Enhanced binary tree efficiency" does not measure up to expectations, there is no reason to be concerned. Re-optimizing will have no further effect until more words are added. After optimization, the dictionary is simply as efficient as the scheme employed allows with the words currently in the dictionary. Maximum efficiency is not just a function of the number of words but also the words themselves!

Before returning to the Dictionary Optimization Module, you are asked if the backup of the dictionary file should be deleted. This file has the same name as the dictionary file being optimized but has the ".BAK" extension. The backup of WISE.DIC is thus WISE.BAK. You may delete this file if all apparently went okay during the optimization process. If a known problem occurred during optimization, return to DOS and erase the dictionary file being optimized, then rename its backup file using the ".DIC" extension.

Correcting words in the dictionary

Every month or so, it is advisable to rid the WISE dictionary of misspellings. To do so, first get a listing of WISE.TXT that lists all recently added words. Then from the Dictionary Optimization Module, select Correct. When this is done, a list of available dictionary files is displayed. Enter the name of one of these files (WISE uses WISE.DIC by default; the others, if any, are personal dictionaries). When this is done, the program lists all words in the dictionary as well as the efficiency statistics as described in the preceding section. The program will then prompt for a key press to continue.

Upon continuation, a prompt appears asking for a search string. To begin correcting words beginning with the letter "D", just type "D" followed by <Enter>. A list of words that begin with the chosen letter will appear. Use the up and down arrow keys to scroll up and down through the list. The "Home" and "End" keys place the cursor on the first and last words in the current subset (beginning with the letter last selected). The "Page Up" and "Page Down" keys may be used to go up and down the list 20 words at a time. To select words beginning with another letter, press that letter at any time.

Once you find a word to be corrected or removed from the list, press the "Ins" or "Del" key, as appropriate. When "Ins" is pressed, you may edit the word to correct the spelling. Press <Enter> when the spelling is correct. When the "Del" key is pressed, the word is removed entirely (a blank space is left). When done correcting the dictionary file, press the "Esc" key. As a precaution, a prompt will appear asking if the changes should be saved. If the response to the prompt is "N", then the old dictionary file will be restored. If the answer is "Y", the corrected dictionary file is optimized and new statistics are displayed. When changes are saved, another prompt will ask if the backup file is to be deleted, if all

appeared to have gone well, answer "Y". Otherwise the backup dictionary, with a ".BAK" extension, will remain in the WISE directory for use in restoring the original.

Once all words in WISE.TXT have been checked and misspelled words listed in WISE.TXT have been deleted, the WISE.TXT file may be deleted so that only words added in the future will appear the next time dictionary maintenance is done.

8. Using WISE

Making selections from WISE menus

Much has been done to make selecting options from WISE menus as easy and quick as possible. In order to make a selection from a WISE menu, use the arrow keys. This moves a highlight bar over the available options. Another way to quickly advance through the choices is to press the first letter of the desired option. Pressing the same letter repeatedly will advance to the next option beginning with that letter. This is especially useful when selecting statement types and geographic areas. Once the desired option is highlighted, press the <Enter> key to select it. An item selected in this way will begin to blink. In order to deselect an item, press the "F9" key. To advance to the next screen or menu, press "F10".

Though WISE is for the most part intuitive, pressing "F1" will provide basic help when needed. Pressing “F1" while editing will display edit help. To get a list of current statements (with expiration times), press "F3".

At some point, it may become desirable to reset WISE without completing a statement. To do this, press the "Esc" key. When this is done, a prompt will appear asking if you are sure you want to reset. To exit WISE at any time, press Ctrl-End. A prompt will ask for verification before exiting WISE.

The main menu

Run WISE from DOS by typing "WISEII" or just “WISE” if a WISE.BAT file has been created; otherwise, run WISE from a menu program or Windows icon. When WISE is run, the first thing that appears is the main menu screen (see figure 9).

When the "WARNING/STATEMENT" option is selected, WISE will continue to the statement type selection screen. WISE will remain in "WARNING/STATEMENT" mode from that point on. **Statements written and sent to AFOS in this mode are sent under the actual AFOS product identifier to the appropriate addressee as an actual product**.

To write a practice statement, select "Practice" from the main screen menu. WISE will continue on to the statement type selection screen and will stay in "Practice" mode from that point on. When in practice mode, products are sent to AFOS as WRKxxx, where xxx is the default product designator. The "WARNING/STATEMENT" and "Practice" modes may only be selected from the main screen.

The "Service Backup" option can be selected to provide backup for other stations. When this item is selected, a menu containing available stations will appear. Select the ID of the station for which backup is to be provided from this list. Once a backup location is selected, it remains the current location until another is selected from the list of available locations. To designate your local site as the current location, you must select "Home" from the service backup location list.

Select the "COMMS BACKUP" option in order to enter backup communications mode. Notice that there is no distinction between dial backup and dedicated backup modes since both are now at the same baud rate. Select "COMMS BACKUP" to use either dedicated or dial backup communications. Once "COMMS BACKUP" has been selected, this menu option changes to either "NORMAL COMMS" or "PC-AFOS/LAN", depending on whether communications are normally through a serial connection or a local area network (LAN). To return to normal communications, select "NORMAL COMMS" or "PC-AFOS/LAN", as appropriate (this option will then change back to "COMMS BACKUP").

Once "WARNING/STATEMENT" or "Practice" mode has been selected and the “F10" key pressed, WISE progresses immediately to the statement type selection screen. On this screen as well as others that follow, the box at the top of the screen will indicate the current WISE configuration. Be sure to note what appears in that box before getting too far along into a statement.

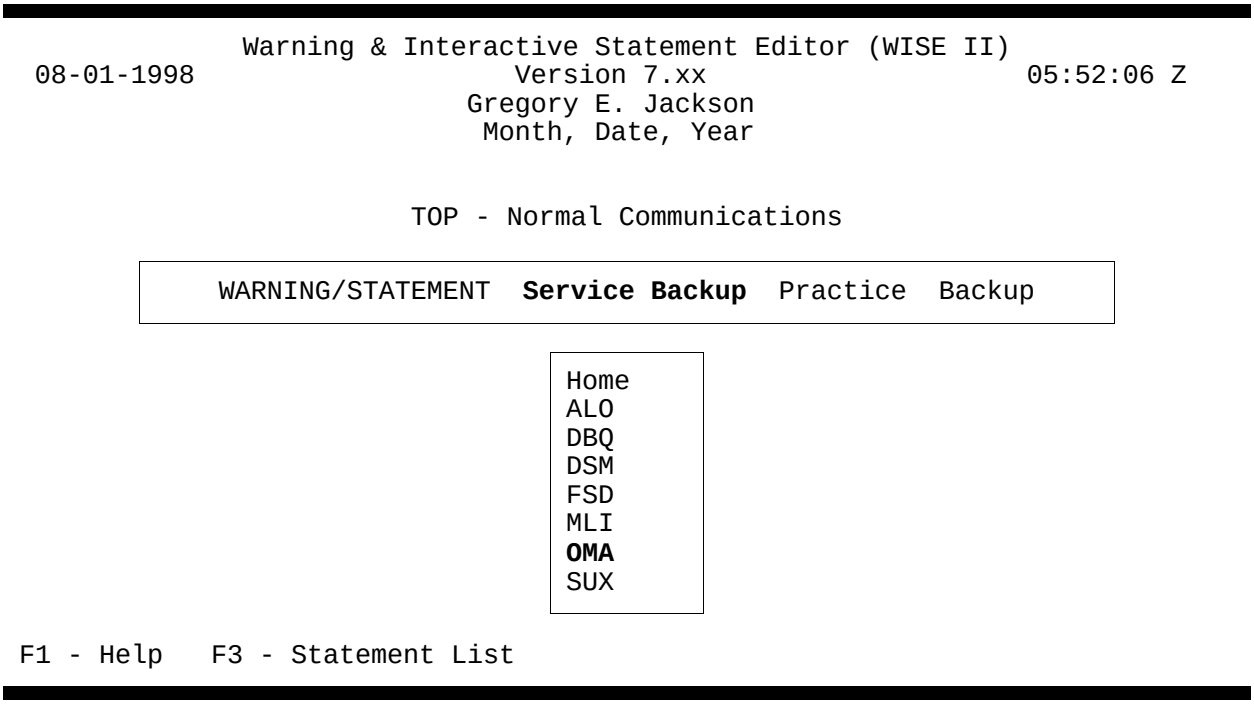

Figure 9 - Main WISE menu screen

Statement type selection

Following the selection of either "WARNING/STATEMENT" or "Practice" from the main screen menu, the statement type selection screen will appear (see figure 10).

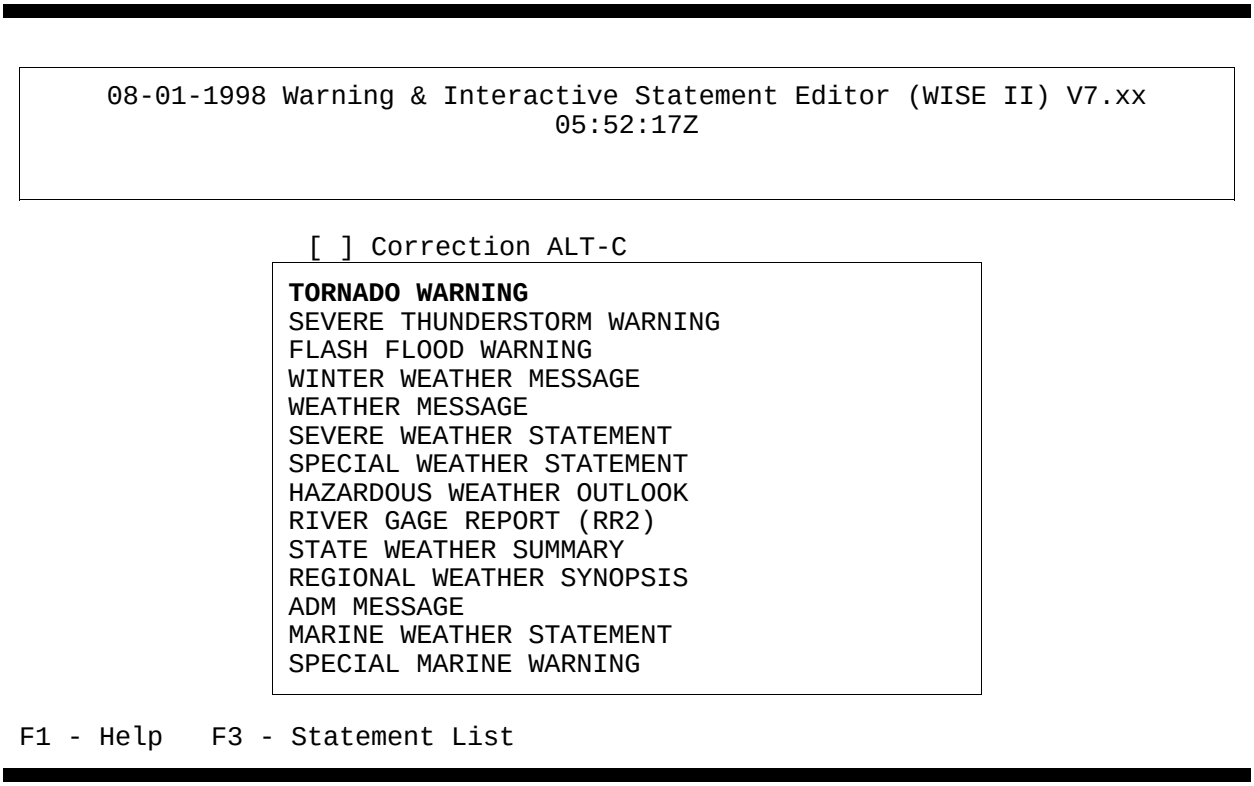

Figure 10 - Statement type selection screen

To begin writing a particular type of statement, select it from the menu shown on the statement type selection screen. If you want to correct the last statement written of a particular type, press Alt-C and then select the statement type from the menu (an "X" will appear in the correction box on the upper left side of the menu).

On following screens that have the box at the top of the screen, the name of the statement will appear within the box along with the current mode of operation.

Expiration time and the UGC

For those statements that require a Universal Generic Code (UGC) before the text of the product, you will have to select a message expiration time and geographically defined area. The first screen that appears for this purpose is the valid time (how long the message will

remain in effect) selection screen. Some statements that include a UGC are configured with a default expiration time, in which case the valid time selection screen does not appear.

On the valid time selection screen, a box is displayed in the center of the screen with a number of common time intervals (figure 11). Though many are presented, only realistic and customary valid time periods for the selected product should be chosen.

Alternately, if a specific expiration time is desired, press ALT-C. You will then be asked for a six digit expiration time. This time is to be entered in UTC in the form DDHHMM (day, hour, minute). This six digit time group is in the same format as the expiration time at the end of an AFOS product's UGC code. If this selection was made in error, press "F9" to return to the menu.

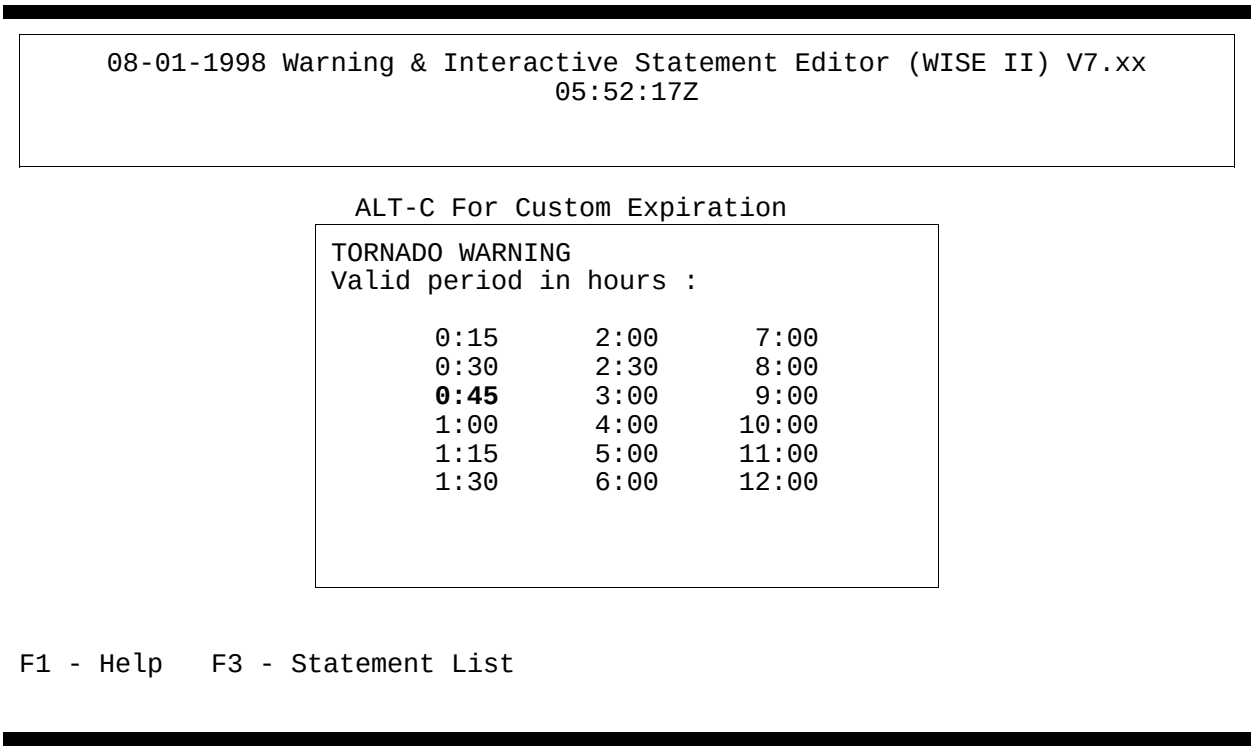

Figure 11 - Valid time selection screen

Once the valid or expiration time is selected, press "F10" to advance WISE to the UGC selection screen. Once again, a product that includes a UGC may be configured to use a default UGC in which case the UGC selection screen will not appear. See figure 12 for an example of the UGC selection screen.

On this screen, when CWA and ZFA maps are defined a map will be displayed on the bottom half of the screen. On this map, areas that have not been assigned a UGC and are thus not graphically selectable appear dark gray on the map. Unselected areas that may be selected are colored light gray on the map. In unsegmented products, selected areas are yellow. In segmented products, selected areas may be of several color or color and pattern combinations. Unselected items in the text box on the top of the screen are also light gray while the selected items are the color that corresponds to that of selected areas in the graphic box. In the text selection box, the cursor location is indicated by white text.

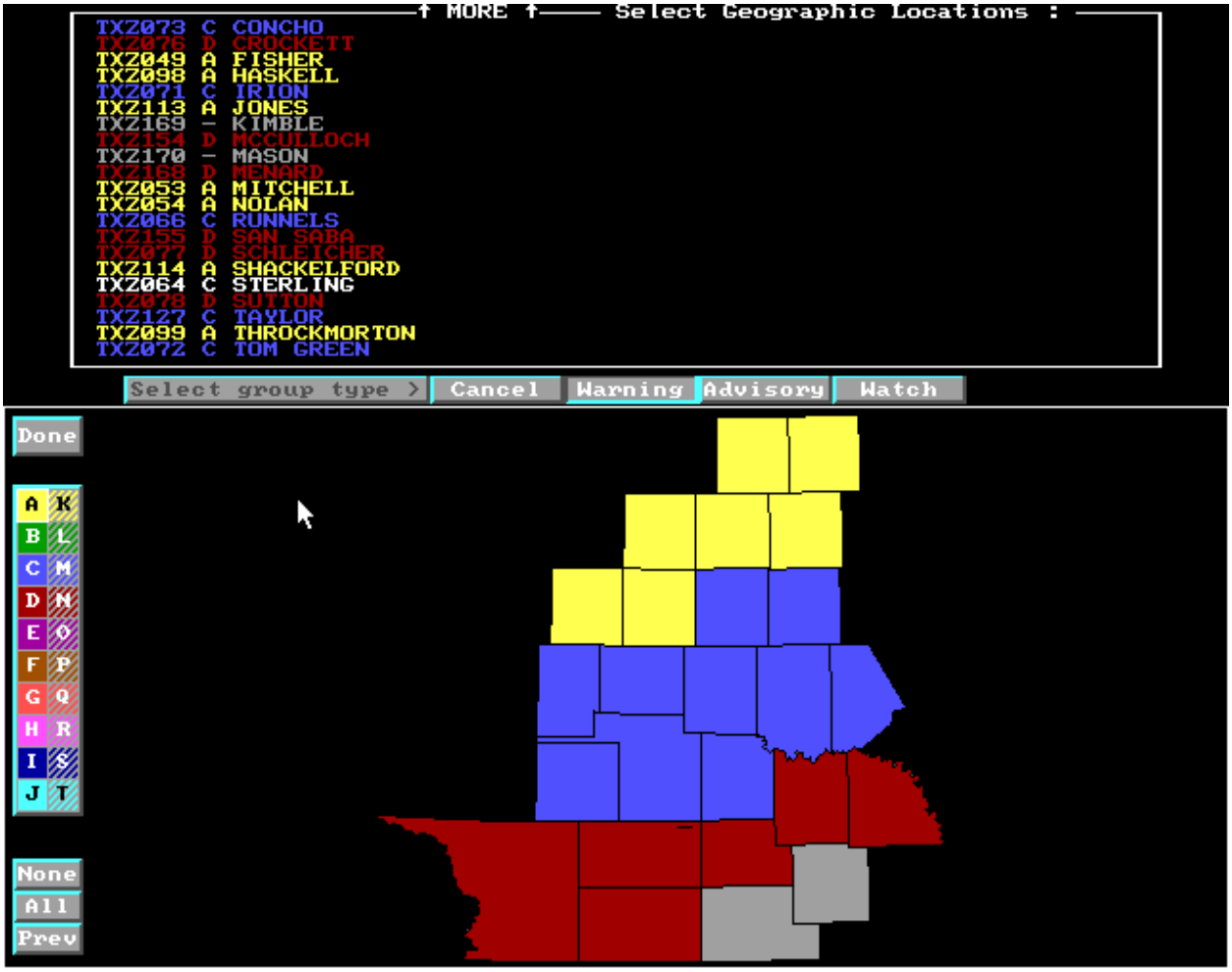

Figure 12 - UGC selection screen

The user has two ways of selecting the desired geographical area. The first method is to scroll up/down the list to highlight the desired location. Once highlighted, press the enter key to select the location. Repeat this process for each location to be included in the statement or warning.

The second method of selecting the desired geographical area(s) to be included in the UGC code, is to use the graphical representation of the CWA or ZFA in the lower portion of the screen (provided the map(s) have been created). On this screen, select the appropriate zones, counties, or marine areas as needed for your product using the mouse. Click the left mouse button to select a geographic area or the right mouse button to deselect an area. Click on the “Done” button to the left of the CWA or ZFA graphic to go on.

The current forecast group is selected by clicking on one of the group selection buttons labeled “A”-“T”. The current group can be selected using the keyboard by pressing the “Shift” key and the letter corresponding to that group. Press "F10" when done making selections to advance forward to the edit screen.

If the statement is for a segmented product that requires segments to be ordered according to the kind of information they contain, as in the new NPW and WSW formats, an additional row of buttons will appear above the map that are labeled “CANCEL”, “WARNING”, “ADVISORY”, and “WATCH” (refer back to figure 12). When a group has been selected, one of these four buttons must be pushed using the mouse to designate the segment type. When a segment type has been specified for a group, the selected button will remain depressed. If a user attempts to select counties or zones on the map before having pressed one of these four buttons, WISE will beep and flash the “Select group type” button for two seconds as a reminder.

If the product is a warning that uses **county** FIPS codes, selecting a county and pressing <Enter> results in the display of a geographic division selection box. You may select up to two parts of a county by using the cursor (arrow) keys and then pressing <Enter>. To select an extreme portion of a county, press ALT-X prior to pressing <Enter>. As you select the geographic division(s) of a county, your selection will be indicated at the top of the box in plain language. Press “F10" once the proper geographic division has been selected or press “F9" to deselect portions of a county. If no county division is selected, pressing “F9" cancels selection of the county. In order to change geographic divisions of counties already selected, just select the county again. A shortcut for selecting an entire county is to press Ctrl-Enter rather than just the <Enter> key. The same results can be obtained by holding down the “Ctrl” key as counties are selected using the mouse.

When using a mouse, divisions of a county may be selected by clicking on the geographical division buttons with the left mouse button. Pressing the right mouse button on a geographical division button that is selected will deselect the geographical division. If no geographical division is selected, pressing the right mouse button will cancel the selection of the county. When using the mouse, an extreme portion of a county may be selected by clicking on the “Extreme” button in the geographic division selection box. When done selecting the appropriate county geographic divisions, click on the “Done” button.

Clicking on the “Prev” button to the left of the CWA or ZFA map will result in the automatic selection of those counties, zones or marine areas that were included in the previous product of the same type composed by WISE. This is convenience when correcting the a previous product. When working with segmented products, WISE will group zones as they were grouped in the previous product.

The “All” button to the left of the CWA or ZFA map differs in functionality depending on whether WISE is constructing a non-segmented or segmented product. When the current product is non-segmented, pressing the “All” button will result in all counties, zones or marine areas being selected automatically. For segmented products, WISE will assign each county or zone to the last group that it was a part of. For segmented products, WISE maintains a file containing the latest groupings and forecasts from which this grouping information is obtained. WISE is limited to 20 groups, so in some cases counties or zones may remain unselected.

When a county with an adjacent marine area is selected, WISE will no longer ask if the adjacent marine areas are included. With the advent of bullet warnings, combined warnings became a part of history, thus separate warning products are now required if adjacent land and marine areas are to be warned for an event.

When done selecting geographic areas, press "F10" or click on the “Done” button to continue. When marine areas are selected, WISE may ask (if it has been configured to do so) if intermediate breakpoints are to be listed. If you wish all breakpoints included in the marine areas selected to be listed, enter "Y". If only the endpoints are to be listed, enter "N". Upon completion of the UGC selection process, WISE will proceed either to a call to action selection screen or the final editing screen.

Selecting call to action statements and preformats

Some statement types may be configured to allow the selection of canned call to action statements and preformats. If so, the call to action statement selection screen will appear after the basis edit screen. The box in the middle of the screen displays the categories from which call to action statements may be selected. The box on the bottom of the screen displays either the first line of call to action statements that have been selected or the name of a selected preformat file. An example of the call to action selection screen follows in figure 13.

A brief description of various function keys that are active on the call to action selection screen is located at the bottom of the screen. Note that you can remove a call to action statement or preformat from the list of currently selected call to action statements at the bottom of the screen by pressing the "Del" key. If you do not wish to select any call to action statements, just press "F10" without making any selections.

A preformat may be selected to include as a call to action statement by pressing ALT-P. When this is done, a list of available preformat files will appear at the top of the screen, and you will be prompted for the name of the file you wish to use. Enter the name of a preformat file; otherwise, just press <Enter> without entering a file name if you decide not to select any of the preformats. In the list of select call to action statements, select preformat files are preceded by “+”.

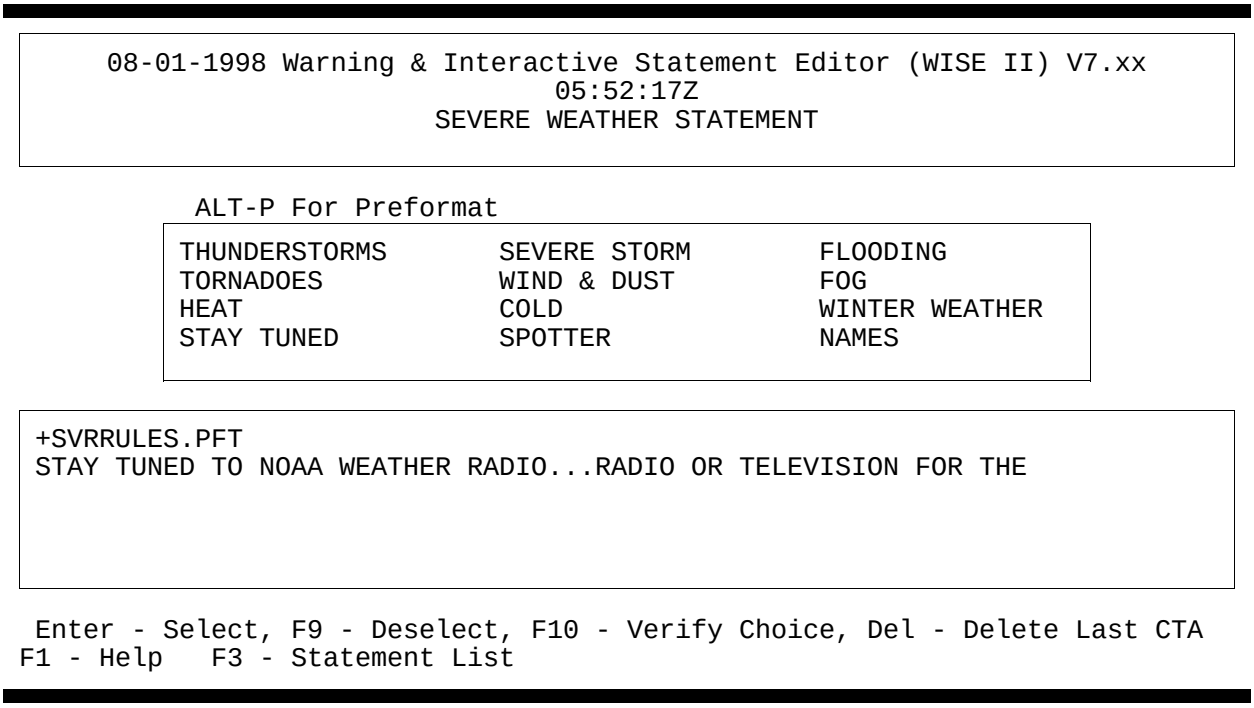

Figure 13 - Call to action selection screen 1

When a category is selected from this screen, another call to action screen appears with a list of call to action statements for the selected category. Within the box on the bottom part of the screen will be listed several call to action statements, each one preceded by an arrow ("6"). Above that box is an indicator showing which call to action statement is highlighted and how many call to action statements are in the chosen category. In the sample screen, the indicator is "1/8" indicating that statement number 1 of 8 is currently highlighted. There may be more call to action statements than will fit on the screen. If so, using the cursor (arrow) keys, other call to action statements can be revealed. If you do not wish to select any statement from the list displayed, just press "F9" and you will be returned to the call to action category selection screen.

When done selecting call to action statement or preformats, press “F10" to go on the editing screen.

Templates prior to editing

Some statements may be configured so that a "template" is run. A template is similar to a small program that tells WISE to ask for various kinds of input. These include yes/no questions, menus, and direct text entry. The basis for the statement you are writing is then assembled based on your answers to the questions presented by the template. Simply follow the instructions the template presents. Some types of input require pressing "F10" to continue. When an item blinks, "F10" needs to be pressed to continue. Once the template has been run, WISE will continue to the editing screen.

Storm report inclusion

When a statement is configured to do so, WISE will prompt the user to indicate if severe weather storm reports will be included in the basis of the product. If the answer to this prompt is “Y”. WISE will insert an ampersand (“&”) after the last text of the product.

The editing screen

The final step before product transmission is the editing screen. On this screen, the product will appear in the same form as it will be when transmitted to AFOS. On this screen there are two delimiting symbols,“**—**” and “$$”. The diamond symbol is not transmitted to AFOS. This character cannot be deleted and serves as a marker used by WISE to keep track of product parts. For instance, this delimiter separates the basis of the statement from the call to action statement. In segmented products “$$” serves to separate product segments, so this delimiter will be found after the basis of one forecast segment and before the header of the next. Like “**—**”, “$$” cannot be deleted. Obviously the user might manually put this delimiter in the text. This practice is strongly discouraged.

On the edit screen, the second to last line provides several useful product statistics. The first of these is the phrase “EDIT STATEMENT”, which merely provides instruction to edit the statement, making final changes. Next is an indicator which identifies the current mode as “PRACTICE” or “STATEMENT”. When in “PRACTICE” mode, the product header causes the product to transmit to AFOS as a “WRK” product. When in “STATEMENT” mode, the product will go out as an actual warning or forecast product. The cursor “X” and “Y” positions are indicated next followed by the current length of the product in lines. Finally, the edit screen indicates how many free lines are left in the edit buffer. This is not a number of concern as WISE will reallocate more editing space when the edit buffer free space becomes limited.

On the editing screen, look at the AFOS communications header, the MND, and the text of the product. Changes to the header information (other that the AFOS header) and call

to action statements may also be made. However, if one of those sections is changed using the function key options (at the bottom of the screen), then anything outside of the basis may be lost. If necessary, only edit text outside of the basis section after any changes using the function keys have been made. AFOS transmission header information cannot be edited directly. Instead, the use of the edit screen functions designed to change the header information may be used. Below is a list of the functions available on the editing screen that allow changing of header and call to action information.

F4	Statement type
F5	Valid or expiration time
F6	UGC (geographic area) selection
F8	Call to action statements

When the edit screen appears, the edit screen may appear with text already in the basis section(s) of the product if a template was run or a preformat was specified for the product being written. Depending on the preformat, there may be text fields that need to be replaced by the pertinent information. These fields are enclosed by brackets ("{}"). For example, if "{LOCATION}" is in a preformat, replace the field with a location like "GOODLAND". Don't be concerned about missing any of these fields as the edit screen will not allow you to exit if any bracketed fields remain. If you want to advance to the next bracketed field, press Ctrl-B.

If a template or preformat was not specified for the statement, blank space will appear in the portion of the product where the basis belongs. This space will be a blank line before the last "**—**" symbol of unsegmented products. There will be two of these symbols within unsegmented products, like short-fused warnings, that contain automated template sections. Within segmented products, the editable area for each forecast segment is located between the "**—**" symbol and the "$$" delimiter. Additionally, editing is allowed before the first "**—**" of a segmented product. This editable area is for overview or summary information, as is included in products like the NPW and WSW. Call to action statements or initials may be placed after the last "**—**" of an unsegmented product or the last "$$" of a segmented product.

To use text from a previous statement produced by WISE, press "F9". In unsegmented products, Pressing "F9" repeatedly causes WISE to cycle through the last 10 basis statements, eventually returning to the original basis as it existed before "F9" was pressed. These basis statements may be from any unsegmented product type recently written using WISE. For segmented products, pressing "F9" will cause the basis of each group to be replaced by the last forecast written for that group using WISE. In will not be uncommon for a new grouping to take in portions of two or more previous groupings. In this case, the latest forecast written for any of the old groups included in the new group will be imported as the basis of the new grouping. Pressing "F9" will toggle back to the original basis statements.

Note that if the statement is to be a correction of a previous product, pressing “F9" will provide the text from the original product. Recall that on the UGC selection screen, pressing the “Prev” button causes WISE to identify the groupings used in the last product of the same type.

Before going beyond the editing screen, be sure to do a spell check, if time is not critical, to ensure the quality of the statement. To do a spell check, place the cursor at the top of the edit screen and press "F2". If misspellings are found, WISE will give the option of replacing (or editing) the word, skipping the word, adding the word to the dictionary, or stopping the spell check. Select the appropriate option. If option 1 (replace) is chosen, you will be allowed to edit the word at the bottom of the screen. Press <Enter> when the spelling is corrected. Be careful not to add a word to the dictionary unless you know it is right. If there is any doubt and there is no time to look up the word, indicate that you wish to skip the word (option 2).

For edit key help, press ”F1". A description of editing keys can also be found in Appendix A. When done editing press "F10" to go on. A sample editing screen example follows (figure 14).

```
+0000000,1+0000000,2+0000000,3+0000000,4+0000000,5+0000000,6+0000000,7+000,V7.00
ZCZC LBBTORSJT ALL 090555
TTAA00 KSJT DDHHMM
TXC335-090555-

BULLETIN - EAS ACTIVATION REQUESTED
TORNADO WARNING
NATIONAL WEATHER SERVICE SAN ANGELO TX
1153 PM CDT TUE JUL 8 1998


THE NATIONAL WEATHER SERVICE IN SAN ANGELO HAS ISSUED A

* TORNADO WARNING FOR...

* UNTIL 1255 AM CDT

* AT 1150 PM CDT... NATIONAL WEATHER SERVICE DOPPLER RADAR
 INDICATED A TORNADO 5 MILES NORTH OF CACTUS JUNCTION... MOVING
 TO THE EAST AT 20 MPH.

* THE TORNADO IS EXPECTED TO BE NEAR...
   SIMPSON AT 1208 AM CDT
   GRIMESLAND AT 1215 AM CDT
   WASHINGTON AT 1224 AM CDT

PERSONS IN OR CLOSE TO THE WARNED AREA... TAKE SHELTER
IN A BASEMENT OR SMALL INTERIOR ROOM... AWAY FROM WINDOWS.


 Edit Statement   Current Mode: STATEMENT    X=15  Y=  3  Lines= 25  Free= 74
 F1-Help  F2-Spell  F3-List  F4-Type  F5-Exp  F6-UGC  F8-CTA  F9-Last  F10-Done
```

Figure 14 - Final editing screen

Product transmission

After the final editing screen is exited, the product transmission screen appears. A menu provides a number of options whose descriptions follow. An example of the product transmission screen appears after the option descriptions (figure 15).

Send Message to AFOS &Pager	Transmit the product to AFOS and via pager. A dialog box, described later in this section will appear. This option only appears for select products when a locally produced paging program (WISEPAGE.BAT or WISEPAGE.EXE) has been created.
Send Message to AFOS	Transmit the product to AFOS. A dialogue box, described later in this section, will appear.

Reset for Next Message	Resets WISE and returns to the main screen.
Review Message	Return to the editing screen for further review. After AFOS transmission has occurred, the product will be automatically labeled as a correction when this option is selected.
Print Message	Prints a copy of the product.
Form Feed to Printer	Sends a form feed to the printer
Comms Backup (or Normal Comms)	Toggles to Backup(Normal) communications mode. The current mode is indicated in the box at the top of the screen.

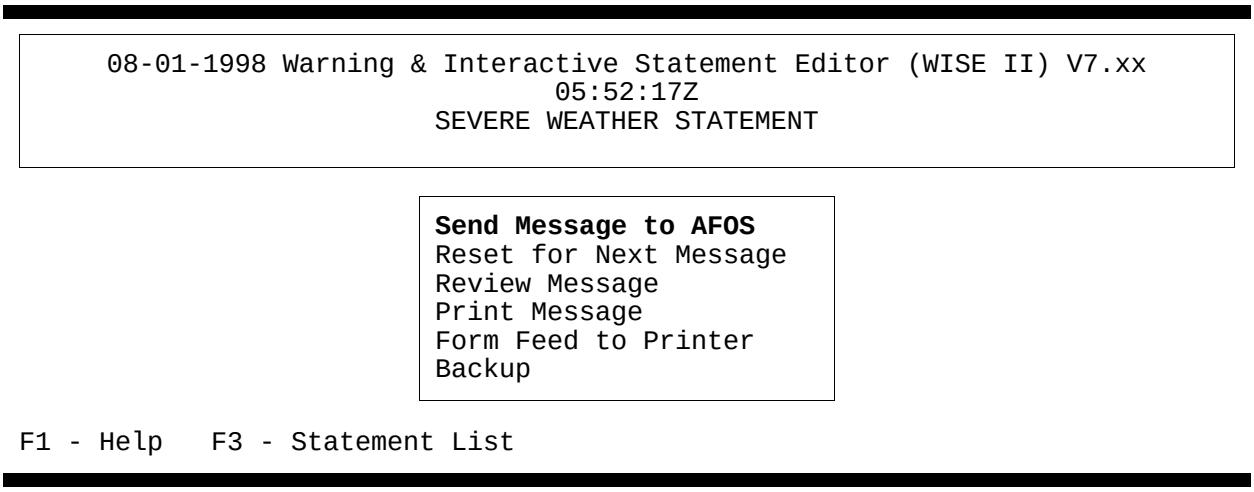

Figure 15 - Product transmission screen

When the "Send Message to AFOS" option is selected, a dialogue box like the one shown in figure 16 appears. If the AFOS ***communications header*** is okay, enter "Y". If you do not intend to send the product, enter "A" to abort. If any changes need to be made to the product, enter "N". Products may be configured so that the product node and/or product designator must be manually entered. In this case, WISE will require that this field be edited to provide a valid AFOS PIL.

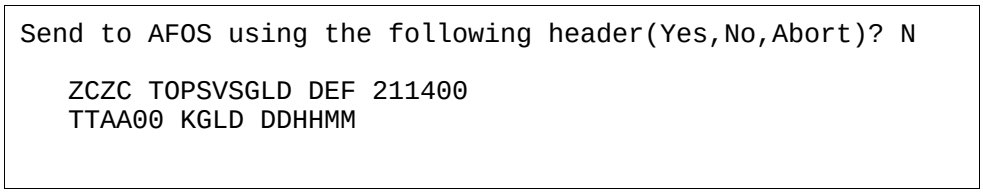

Figure 16 - AFOS header verification dialog

Within this dialogue box, you will be prompted to enter each part of the AFOS communications header that WISE will allow you to change. The existing header information is used as the default to each question (simply press <Enter> to retain what is already there). The product identifier might be changed to "WRK" to temporarily store the product in AFOS as a work product to be transmitted later (the addressee should be changed to "000" also). Or if the product is to be sent to a specific addressee, the product address might be changed. The product expiration time option was removed from this dialog box in WISE V7 since changing this expiration time only affected the store time in AFOS. This determines setting determines the time at which time-purged products show up as “EXPIRED” on an AFOS PIL listing (P:). Figure 17 shows an example of this dialogue box.

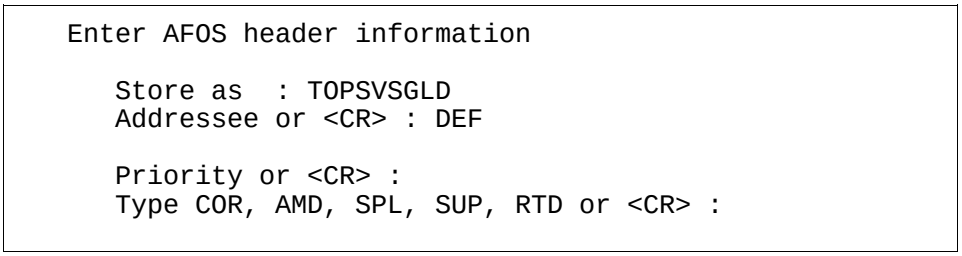

Figure 17 - AFOS header editing dialog

Appendix A - Editing Keys

WISE and INSTALL editor overview

When using the WISE editor in the INSTALL program or within WISE on either the basis editing screen or the final editing screen, you may get editing help by pressing “F1" (or Alt-H in the INSTALL program). To clear the help screen, press any key. The WISE and INSTALL program editors have evolved in different directions as the WISE editing keystrokes have been changed to agree more with common editing conventions.

The WISE and INSTALL programs operate similarly with respect to cursor movement. To move the cursor within the edit screen, use the cursor (arrow) keys. Pressing “Home” takes the cursor to the beginning of the current line while “End” takes the cursor to the end of the current line. “Page Up” and “Page Down” move the cursor backward and forward, respectively through the edit text 23 lines at a time. The “Insert” key toggles between insert mode and overstrike mode. The default edit mode is insert mode. To delete the character to the right of the cursor, press “Del”. The character to the left of the cursor may be erased by pressing the “Backspace” key.

For more program-specific edit key information, see the WISE and INSTALL editing keys sections that follow.

WISE V7 editor

Within WISE, blocks of text are selected for cutting, copying, and deleting by holding down the <Shift> key and a cursor (arrow) key. As the cursor is moved, a block of text is highlighted to indicate the selected block of text. Blocks should not cross delimiters, like the “—” and “$$” delimiters. When a block is select, pressing any printable character will result in the deletion of the block and the insertion of that character in its place.

Ctrl-B	Find Bracket	Ctrl-R	Recover File Save
Ctrl-C	Copy Block	Ctrl-S or F2	Spell Check
Ctrl-D	Delete Line	Ctrl-X or Shift-Del	Cut Block
Ctrl-F	Find	Ctrl-V or Shift-Ins	Paste
Ctrl-G	Find Next	Ctrl-Z	Center Line
Ctrl-M	Delete To Bottom	Ctrl-Cursor right	Next Word
Ctrl-O	Other Dictionary	Ctrl-Cursor left	Previous Word
Ctrl-P	Delete Line Right	Del	Delete Block
Ctrl-Q	Delete Line Left	F10	Exit Editor

INSTALL editor

In the INSTALL program, the editor requires a few extra steps not used within WISE. If you enter the editor from the "Edit an ASCII file" option in the Edit menu, the program prompts for a file name. Otherwise, the INSTALL program determines the appropriate default file name. If the file already exists, the file is loaded and the edit screen appears. Otherwise, INSTALL indicates the file is a new file and a blank edit screen appears.

Once editing has been completed, the program will then ask "Save as ####(Y/N) ? Y". If the file name (####) is okay, just press the "enter key". Otherwise, press the "N" key followed by <Enter>. If "N" is entered, you are prompted to indicate if you wish to abort the edit, save the edit in an alternate file, or return to editing; answer "A", "O", or "R", as appropriate. Choosing "A" exits the editor without saving changes to the file. Choosing "O" results in the program prompting for an alternate file name. When "R" is pressed, the edit resumes. To abandon the edit, the "Esc" key may also be pressed. When this is done, the editor will ask for confirmation before exiting since abandoned edit sessions are not saved.

Within INSTALL, blocks of text are selected for cutting, copying, and deleting in several steps. First, move the cursor to the first character to include in the block to be selected. Next, press “Alt-B” to mark that character as the beginning of a text block. Then, move the cursor to the last character to be included in this block of text. Finally, press “Alt-E” to mark the end of the block. When this is done, the selected block will be highlighted.

As an alternative to the INSTALL program editor, the DOS editor may be used to edit call to action files, batch files, preformats, and templates. **No other WISE configuration files should ever be edited using an ASCII text editor!**

ALT-A	Abbreviate	ALT-M	Erase to end of product (S-F8)
ALT-B	Mark beginning of block	ALT-O	Other dictionary
ALT-C	Copy block to clipboard	ALT-P	Erase to line end (S-F6)
ALT-D	Delete block	ALT-Q	Erase to line beginning (S-F5)
ALT-E	Mark end of block	ALT-R	Force RECOVER save
ALT-F	Find with optional replace	ALT-S	Spell check (F2)
ALT-G	Repeat last find	ALT-U	Place EOL on lines in current block
ALT-H	This help screen	ALT-V	Paste clipboard
ALT-L	Erase line (S-F7)	Esc	Abort editing session

Appendix B - WISE Preformats, Executables, and Templates

The last field on the statement definition screen (WISE.SMT) can specify a preformat, a run file, or a template file. When a preformat file (ending in ".PFT") is specified, the text contained in this file will be loaded as the default basis statement to be edited by the user.

A run file or executable file (".EXE", ".BAT", or ".COM") specified in this field results in WISE running the specified program. A file with the same name but a ".TXT" extension is expected to be created in the WISE program directory, to be loaded by WISE as the default basis of the statement for user edits.

When a template file (ending in ".TPL") is entered, an interactive statement template file is run. The default basis statement is then composed of a collection of text specified in the template file and user input collected as the template is run.

WISE Preformats (.PFT)

WISE allows for the definition of simple preformats. Preformats are stored in files ending in the ".PFT" extension. When a preformat is specified in a statement definition (WISE.SMT), the text in the preformat is loaded verbatim into the basis of the statement prior to editing by the user. Preformats may also be manually selected from the call to action screen (ALT-P), though in that event the preformat is included in the call to action section of the product. There should be no more than 96 PFT files in the WISE installation directory as that is the maximum number of “PFT” files that can be displayed on the call to action selection screen at one time.

When text must be supplied by the user, brackets ("{" and "}") may be used to enclose a description of the information to be substituted by the user for the text within the brackets. The reason why these brackets should be used is that from the WISE edit screen, the edit cannot be completed until all "{" and "}" characters have been removed. The assumption is that in removing these characters, the user will be prompted for specific information to be supplied at that point to make the statement complete.

For instance, in a preformat line like "PEOPLE IN {LOCATION} SHOULD REMAIN ALERT TO CHANGING WEATHER CONDITIONS", the user would replace "{LOCATION}" with text such as "NORTHWEST KANSAS". Though this is a crude means to an end, this method is very useful for preformats that have very few such fields to replace. Even in long preformats, it is not difficult for a user to find a preformat field since “Ctrl-B” can be pressed to find any remaining fields.

Though ".TXT" files created by executable files are not exactly preformats, they may also contain the "{" and "}" brackets to indicate where information is to be supplied by the user.

WISE Templates (.TPL)

Local Editing of the Template Files...DANGER!

L Template files, *filename.*TPL, are provided with WISE II, that conform to the WSH OML directive for short fused bullet style warning formats. The original template files should be backed up. You can edit the templates using the DOS text editor, but there are commands in the templates that, if they are unintentionally moved to a new location within the template or are removed entirely, the product will not be generated correctly.

N NOTE: Historically speaking, a significant number of software “bug” reports have been traced to the locally edited (altered) templates files! By having the original template file backed up, you can restore your software set up easily.

WISE templates offer a way to add flexibility to the way statements are produced using WISE. It is a good idea to read a description of each command even if at first glance it appears to have no application. See Appendix D for sample warning templates.

To build a template, use any ASCII text editor. The basic rules are as follows:

1. Give the file a ".TPL" extension so WISE will recognize it as a template.
2. Enclose text that is to be placed directly into the basis of the statement in quotes. No carriage return is placed after a line of text in the template by WISE, though automatic line wraps are done by WISE as needed.
3. Each template command, with the exception of template time commands, must occupy a separate line with no other command or text on the same line.
4. Commands and text can be indented with no effect on the output.
5. Blank lines may be used to enhance readability with no effect on the output.

Appendix C - WISE Warning Template Commands

To enable warnings, a template should be built for each warning type. See Appendix D for some sample warning templates. The standard template commands still apply to warning templates, but there are a number of commands that apply specifically to warnings. Remember, every command in a template is on a line by itself. See Appendix B for more information on templates.

Commands:

[BREAKPOINTS], [END BREAKPOINTS]

This command indicates that breakpoints are to be listed, if any are selected. If any breakpoints are selected, the text between [BREAKPOINTS] and [END BREAKPOINTS] is output to the default basis file. The position of the command {BREAKPOINTS} determines where, relative to other text in this block, the listing of breakpoints is to occur, similar to the [COUNTIES] command.

[CITIES] and [END CITIES]

The [CITIES] command marks the beginning of a loop that is to be repeated for each zone or county included in a warning for the purpose of outputting a city list while [END CITIES] marks the end of this loop. Within the loop, the {CITY} function outputs cities within the selected geographical areas.

[COUNTIES] and [END COUNTIES]

The [COUNTIES] command marks the beginning of a loop that is to be repeated for each county included in a warning while [END COUNTIES] marks the end of the loop. This loop is used for creating bullet warnings. Within this loop, {COUNTY}/{STATE} lists the county/state including geographical divisions.

[COUNTYLIST]

These commands tell WISE to list the county or counties included in a warning in the traditional format as in SRWARN.

[CTYMARINE]

This command is the same as [COUNTYLIST], above, with a minor difference - if coastal waters adjacent to a warned county are included in the warning, the phrase “INCLUDING ADJACENT COASTAL WATERS” is appended to the county. This command is intended primarily for tornado and severe thunderstorm warnings. Combined marine and tornado or

severe thunderstorm warnings should use [COUNTYLIST] or [OLDCOUNTIES] instead since combined warnings include an explicit listing of marine areas included. When [CTYMARINE] is used in these cases, redundancy and a longer warning results.

[EDIT]

This enacts the WISE editor box within the templates. This feature was created to replace the "[START LIST]", "[END LIST]", "[GET LIST]" commands and the {LIST} function. Any templates that contain these outdated template features should replace them with the "[EDIT]" command alone! The editing capabilities available through the use of this command is the same as the WISE final editing screen.

[END AUTO]

This marks the end of that part of the template that is to be executed every time any information in the product header is changed from the final editing screen. If no information is to be updated each time header information is changed, place this command at the top of the template. Template commands that put valid times, product names, or geographic locations in the product should be placed before this command.

[FILE]

The [FILE] command can be used to import text from another file into WISE. This file may be produced by an external program executed using the [RUN] command. The name of the file to import must be specified on the line following the [FILE] command. If this file is output as a temporary file by a program executed using the [RUN] command, the filename may include the {PATH} function. See the {PATH} function for more information.

[GET TEXT]

The [GET TEXT] command instructs WISE to get one line of text. To output that line of text place the {TEXT} command on a subsequent line.

[IF ZONES], [IF COUNTIES], [IF BREAKPOINTS], [IF NO ZONES], [IF NO COUNTIES], [IF NO BREAKPOINTS], [END IF]

These commands result in conditional inclusion of the text that follows. The text that follows is only includes in the product if zones/counties/breakpoints are selected, or alternately not selected (i.e. "[IF NO COUNTIES]"). The [END IF] command follows the last line of conditional text.

[MENU] and [END MENU]

These commands mark the beginning and end of a menu. The line following the [MENU] command is the title of the menu or user prompt. Each line between that menu title and the [END MENU] command is a menu option. To output the text of the selected item directly, follow the [END MENU] command with the {TEXT} function. To output other text based on the selection, see the [SELECT] and [END SELECT] commands. Up to 20 choices are allowed.

[REMARKS] and [END REMARKS]

Any text between these two commands is discarded when the template is run. Any notes about the template that explain what it does can be placed in a "remarks" block.

[RUN]

The [RUN] command can be used to run an external program that produces text that is to be imported into WISE using the [FILE] command. The name of the program to run must be on the line following the [RUN] command. The program may be a ".EXE", ".COM", or ".BAT" file. When a program needs access to WISE temporary files, the temporary file name may be inserted by placing the template function {PATH} on the command line. See the {PATH} function for more information.

[SELECT] and [END SELECT]

The [SELECT] and [END SELECT] commands may be used to produce output based on input from a preceding [MENU] or [Y/N] command. To output text based on the first menu choice, precede the text, on a separate line, with {CHOICE1}. Precede text that is to be output if choice 6 is selected with the {CHOICE6} command. Likewise, precede text that is to be output if the result of the last [Y/N] command was "Y" with {CHOICEY} or {CHOICE1}. Precede text to be output for a "N" response with {CHOICEN} or {CHOICE2}.

[START ECHO] and [END ECHO]

Text located between [START ECHO] and [END ECHO] is echoed to the screen when the WISE template is run. These commands allow the template to output instructions to the user.

[SUMMARY] and [END SUMMARY]

Text between these two commands will be used to construct the summary section for segmented products like NPW and WSW.

[Y/N]

This command tells WISE to wait for either a yes or no answer to determine output to the statement basis. See [SELECT] and [END SELECT] for more information.

[ZONES] and [END ZONES]

The "[ZONES]" command marks the beginning of a loop that is to be repeated for each zone included in a statement while [END ZONES] marks the end of the loop. This loop is used for creating lists of zones included in advisories, watches and warnings using the zone format. Within this loop, {ZONE} lists the zone. Unlike the {COUNTY}/{STATE} information available for counties, state information is not available.

[ZONELIST]

The [ZONELIST] command creates a warning-style list of zones selected similar in form to county lists in a tornado or severe thunderstorm warning.

[ZONELIST2]

The [ZONELIST2] command creates a list of zones selected for a statement in the format: IN *STATE*

...*ZONE A*... *ZONE B*... *ZONE C*

{CR}

Inserts a carriage return after the last text output.

{TEXT}

Outputs the line selected in the last [MENU] operation, the text entered with the last [GET TEXT] command.

{LM=x}

Sets the left margin to x. The current line is deleted, so a {CR} should precede this command.

{LTEXPIRE}, {ZEXPIRE}

Each of these commands lists the time when a warning expires. In the case of a combined warning, they list the earlier expiration time. The "LT" commands direct WISE to indicate the expiration time in local time (like 1000 PM MDT) while the "Z" version lists the 4 digit expiration time in UTC.

{NWS}

Outputs the location (city) of the issuing NWS office.

{PATH}

Provides the temporary filename being used by the present WISE session. This function may be used in the [RUN] and [FILE] commands to pass this filename as a command line argument to an external program and to read a file created by that program into the product being assembled by the template. The filename substituted by {PATH} includes the complete file path but no extension (i.e. C:\WISEII\WISE.TMP\021938UH.).

{POS=x}

Moves the cursor to column x of the current line. If the current line exceeds x characters in length, it is truncated to the x-1 character.

{S}

This function is replaced by an "S" if more than one location is included in a warning. This is particularly useful after "LOCATION" in the phrase "FOR THE FOLLOWING LOCATION".

{WARN}

This function tells WISE to list the kind of warning that is being issued. When in practice mode, this function will prefix the warning type with the word “TEST” (i.e., “TEST TORNADO WARNING”).

Template Time Functions:

Template time functions are no longer supported in WISE.

Appendix D - WISE Locator

WISE Warning Locator (WISELOC) overview

When used with WISE, the WISE Warning Locator (WISELOC) can be used to create the entire text of a severe thunderstorm or tornado warning given the latitude and longitude of a storm and the storm's movement. This information is easily accessible on the WSR-88D, even from a remote RDA when radar dial backup is required. Warnings written using WISELOC can easily be produced within a minute. WISELOC can also expedite the writing of follow-up statements.

The information provided in the text of a warning or statement created by WISELOC includes the location of the storm relative to the closest reference city, the location of the storm relative to the closest city, the storm's movement, and a list of towns in the path of the storm including estimated arrival times based on storm movement. When selecting cities to locate a storms position, locations in the path of the storm are used in preference to those not in the path of the storm.

WISELOC Requirements

The system hardware and software requirements imposed by WISELOC are generally the same as those of WISE. WISELOC should only be used on computers with a full 640K of base memory as the program is run by WISE while WISE remains resident in memory. This version of WISELOC will only operate with WISE V7 or greater.

Methodology and Software Structure

When run, WISELOC checks the creation time of WISELOC.DAT (the database) against information contained in WISELOC.PTR (a pointer file) to determine if the files "match". The files will not match if WISELOC.DAT has been updated but WISELOC.PTR has not. If a mismatch is detected, WISELOC compiles a new set of pointers to WISELOC.DAT section headers and stores the information in WISELOC.PTR.

WISELOC then reads WISE current product information from “{PATH}.PRD”, where “{PATH}” is the temporary file name provided by WISE, to determine if the current warning is a severe thunderstorm warning or tornado warning. If the kind of event cannot be determined (for severe weather statements and short term forecasts), the

user will be prompted to supply this information. The expiration time for the warning is also read from this file.

The user is prompted for information about the storm including the time of the product used to position the storm, the storm's latitude and longitude, the storm's movement, and the width of the swath of severe weather. Based on this information and the time on the computer clock, WISELOC produces a storm path limited to the period of the warning which widens with distance to account for uncertainty and erratic movement.

The “{PATH}.SEL” file is read to determine which geographic locations have been selected within WISE and then reads WISE.CTY (counties) and WISE.BPT (breakpoints) to determine the UGC's for selected locations.

WISELOC will first extrapolate the position of the storm based on the storm's initial location, its velocity, the time of the product used to position the storm, and the age of that product.

For each zone, county, and breakpoint selected for inclusion in the warning, WISELOC performs a binary search of WISELOC.PTR to find an entry corresponding to each selected UGC. This entry provides a pointer to the location in WISELOC.DAT where the information about the selected geographic locations is contained. This search method allows the program to locate geographic locations in rather large WISELOC.DAT files very quickly. A similar search is done to find the reference cities and other sections in WISELOC.DAT.

If a reference city location exists within WISELOC.DAT, WISELOC finds the closest reference city to the storm. This city will be the primary location reference for the storm's initial position. WISELOC will then look for the highest priority locations (priority "0") within the warned area. If any are found within the warned area, the closest of these becomes the primary reference in place of the locations listed in the reference city section of WISELOC.DAT. Finally, if at least one priority "0" city is in the projected path of the storm, the closest of these cities to the storm will be used as the primary reference point.

WISELOC then selects a secondary reference location. The closest city to the storm within the warned area is used as the secondary location reference. If at least one city is within the path of the storm, the closest city in the path of the storm is used as a secondary reference. If the secondary and primary reference cities are the same, the location is listed only once. The location of the storm relative to the primary and secondary reference points and the movement of the storm are output WISELOC.DAT. If the "8-point" option is indicated in WISELOC.DAT, storm locations will be defined using an 8-point compass rather than the default 16-point compass.

Cities that will be intercepted by the storm path are selected in a conservative manner. The path of the storm begins with the storm width as entered by the user and expands equally on either side with distance traveled by the storm. All cities within the path of the storm that can be reached within the warning valid time or the maximum time allowed as specified in WISELOC.DAT (whichever is less) are included in a preliminary list of locations to list. For the purpose of determining locations affected, WISELOC assumes the leading edge of the storm is straight and aligned perpendicular to the direction of movement (not always true). Cities in the path of the storm are assumed to be circles with diameters as specified in WISELOC.DAT.

All locations in the initial list of locations affected that can be reached by the storm by the end of an "include all" period or have a priority of "0" or "1" (as indicated in WISELOC.DAT) are moved to the final location list. If the maximum number of cities allowed (specified in WISELOC.DAT) has not been reached, WISELOC will include priority "2" cities, beginning with those closest to the storm, in the final location list. If the maximum number or locations still has not been reached, priority "3" cities are included in the final location list, beginning with those closest to the storm.

If no locations are in the final selection list, the "no cities" phrase (in WISELOC.DAT) is used in place a list of locations affected.

The time required for the storm to reach each location in the location list is calculated. If the truncation option is selected (in the WISELOC.DAT file), estimated arrival times beyond 5 minutes are truncated to the last multiple of 5 minutes. Locations affected (and optionally arrival times also) are output to {PATH}TXT, which can be imported into WISE.

Data File Maintenance

The geographic location database WISELOC.DAT must be created and maintained as described in the installation and setup section that follows. The pointer file WISELOC.PTR is automatically updated by WISELOC after each edit to WISELOC.DAT and requires no manual edits. This is a binary file and should not be manually changed in any way. WISE Statement Files (WISE.SMT) and Templates (*.TPL) will need to be updated to take advantage of this program.

Specifically, within the WISE warning templates that will be used to produce warnings using WISELOC, the following lines must appear:

```
[RUN]
WISELOC.EXE {PATH}
[FILE]
{PATH}TXT
```

Installation and setup of WISELOC

Copy the file WISELOC.EXE to the hard disk directory where WISEII.EXE resides. Create WISELOC.DAT in the same directory with entries as described in the following text using the DOS editor. The WISELOC.DAT file contains the city database for both the home office and backup office CWAs Note that the order of the sections in the WISELOC.DAT file is not important in any way, so the section order is entirely a matter of personal preference. However, the [END] section must be last and there must be no blank lines in this file.

1. To disable WISELOC for bullet warnings, place the section header [NOBULLET] in the WISELOC.DAT file. When WISELOC is used for Short Term Forecasts and other statements the bullet flag is forced off. The [BULLET] header may still be used, but WISELOC now defaults to bullet warnings in the absence of this header. For example:

   ```
   [NOBULLET]
   ```

2. To produce a warning basis with concise wording, include the section header [CONCISE]. The default behavior is now [VERBOSE] to adhere to current warning format guidelines and does not need to be included in the WISELOC.DAT file, though it may. Example:

   ```
   [CONCISE]
   ```

3. Up to 10 user-defined information source and weather threat phrases must be locally defined in WISELOC.DAT in the [SVRSOURCE]/[TORSOURCE] and [SVRTHREAT]/[TORTHREAT] sections. WISELOC constructs the basis of the warning using these phrases in the formulation “source”+”threat”. For this reason, when constructing the phrases for these sections, it should be kept in mind how each of the “source” phrases combines with each of the “threat” phrases. When WISELOC is run, the user will be able to select one source and one threat phrase from the list of possibilities entered in these sections. For example:

   ```
   [SVRSOURCE]
   ```

```
DOPPLER RADAR AT SAN ANGELO INDICATED
DOPPLER RADAR AT MORAN INDICATED
DOPPLER RADAR AND SPOTTER REPORTS INDICATED
SPOTTERS REPORTED
LAW ENFORCEMENT REPORTED
[SVRTHREAT]
A SEVERE THUNDERSTORM
A RAPIDLY DEVELOPING THUNDERSTORM
```

4. By default, WISELOC will use an 8-point compass to give the location of storms relative to cities. If a **16-point compass** is desired, include the section header [16POINT] to the WISELOC.DAT file. No information follows this section header. Though the default is 8-point, you may include the section header [8POINT] to specify a 8-point compass. Below is an example:

   ```
   [16POINT]
   ```

5. By default, WISELOC calculates estimated arrival time to the closest minute. To **truncate arrival times** to a multiple of 5 minutes, include the section header [TRUNC] to the WISELOC.DAT file. No information follows this section header. Below is an example:

   ```
   [TRUNC]
   ```

6. The **number of cities allowed** in the text of a warning may be limited to prevent an excessively long list of cities within the warning. By default, up to 5 cities are listed. To specify that more or fewer cities should be listed for severe thunderstorms/tornadoes, include the section header [SVRCITIES]/[TORCITIES] with the number of cities to allow on the next line. See the example below:

   ```
   [SVRCITIES]
   5
   [TORCITIES]
   7
   ```

7. To ensure that cities under immediate threat are included in the text of a warning, you may specify the **include all cities time frame**. Cities reached within this time frame will be included in the text of the warning regardless of the number of cities allowed or the priority of those cities.

   By default, all cities within 20 minutes of the storm will be included in the text of the warning. To change the include all cities time frame for severe thunderstorms/tornadoes, include the section header [SVRALL]/[TORALL]

with this time frame specified in minutes on the next line. When determining this time frame, consider how soon follow-up statements identifying other areas of risk will follow. Below is an example:

```
[SVRALL]
15
[TORALL]
15
```

8. Because the path of a storm becomes more uncertain with time, an **upper time limit** to city listing can be defined. Any cities not reached by that upper time limit or by the warning expiration time (which ever comes first) will not be included in the warning text, regardless of city priority.

   By default, the upper time limit is defined as 45 minutes. The upper time limit for severe thunderstorms/tornadoes may be set by including the section header [SVRMAXTIME]/[TORMAXTIME] with the time limit expressed in minutes on the next line.

```
[SVRMAXTIME]
45
[TORMAXTIME]
30
```

9. The **path widening** constant is intended to be used to allow for the uncertainty and iridic nature of storm movement.

   The user has no control over the path widening. The amount of path widening should be specified in the WISELOC.DAT file. The path widening constant is specified as the increase in path width (miles) per mile that the storm travels. The path widening constant for severe thunderstorms/tornadoes is specified on the line following the [SVRSD]/[TORSD] section header. If no path widening constant is defined, the default is 0.2. An example of the proper format for these entries follows:

```
[SVRSD]
0.3
[TORSD]
0.2
```

10. The **initial path width** constant specifies the width of the severe weather path at time zero. As the storm moves the path widens as specified by the path widening constant.

At run-time, the user can specify the initial path width of a severe thunderstorm or tornado. Default path widths for severe thunderstorms/tornadoes can be modified by adding the [SVRWIDTH]/[TORWIDTH] sections to the WISELOC.DAT file. The path width in nautical miles is entered on the line following the section header. An example of the correct format follows:

```
[SVRWIDTH]
10
[TORWIDTH]
5
```

11. When WISELOC finds at least one city in the path of a storm, the list will lead off with a **list leader phrase**.

    By default the list leader phrase is "THIS STORM CAN BE EXPECTED NEAR...". To change this phrase for severe thunderstorms/tornadoes, include in the WISELOC.DAT file the [SVRLISTLEAD]/[TORLISTLEAD] section headers followed by the desired list leader text on the next line. This line may be up to 254 characters (using DOS editor). The variable %RANGE% may be included in the lead line to include a time range corresponding to the warning period during which the locations will be affected (i.e. %RANGE% = "FROM xxx TO xxx").

    If a different lead sentence is desired when more than one location is in the path of the storm, two lead phrases may be entered after the section header. Enter on the first line after the section header the phrase to be used when only one location is in the path of the storm. On the second line after the header enter the phrase to be used when more than one location is identified to be in the path of the storm. See the following examples:

```
[SVRLISTLEAD]
THE FOLLOWING LOCATION IS IN THE PATH OF THIS STORM
THE FOLLOWING LOCATIONS ARE IN THE PATH OF THIS STORM
[TORLISTLEAD]
SOME LOCATIONS IN THE PATH OF THIS TORNADO %RANGE% ARE...
```

12. When no cities are found in the path of a storm, WISELOC will indicate this using a **no cities statement** string.

    Unless otherwise specified, this statement is "THIS STORM IS EXPECTED TO REMAIN IN RURAL AREAS". To specify a different no cities statement for severe thunderstorms/tornadoes, include in the WISELOC.DAT file the [SVRNOLIST]/[TORNOLIST] section headers with the phrase that is to be

used when the storm or tornado path does not intersect any defined geographic locations. You may list several (up to 9) such phrases in these sections if a choice of statements is preferred. In that case, the user will be prompted for the best phrase from the list provided. Examples follow:

```
[SVRNOLIST]
This storm is expected to remain in rural areas.
No cities are in the projected path of this storm.
[TORNOLIST]
The tornado is expected to remain over rural areas.
```

13. The **city list format** string is used to determine whether estimated storm arrival times are included in the warning text and whether the city list should be in paragraph or tabular form.

    The default list format results in a list of affected cities in tabular form with an estimated time of arrival included. By default the city list format is:

    ```
    %LOC% AT %TIME%
    ```

    The city list format must include the location variable (%LOC%). Inclusion of the %TIME% is optional. However, if both %LOC% and %TIME% are included, %LOC% must precede %TIME%. Any other text on this line is optional. The city list will be tabular unless an ampersand (&) is suffixed to the end of the format line. Cities listed in paragraph form are separated by ellipses (...). See the examples below

    ```
    [SVRFormat]
      %LOC%                          BY %TIME%
    [TORFormat]
    %LOC%&
    ```

14. If it is desired that the list of cities effected by a storm should be listed before the storm's initial location and movement, include a [REVERSE] line in the WISELOC.DAT file.

15. **City lists** must be developed for every Universal Generic Code (UGC) that may be warned for using WISE (including backup counties). The city list locates each city by latitude and longitude, specifies the city's diameter, and sets the listing priority of each city.

    One source of latitude and longitude information for locations in your CWA is the USGS Internet site ***http://mapping.usgs.gov/www/gnis/gnisform.html***

Each city list begins with a section header consisting of the UGC of a geographical area (like a county) enclosed in square brackets ([]). For example, the section for a Texas county with a FIPS code of 001 begin with the section header [TXC001]. Though purely optional, its is convenient to put the name of the geographical division immediately after the closing bracket. If the WISELOC program is to be used for writing statements (UGC in “Z” form), each section header must have zone code after the FIPS code. The FIPS code and zone code must be separated by a comma (i.e. [TXC001,TXZ090]). There may be no more than 500 city list section headers in the WISELOC.DAT file.

Following each section header, list geographic areas including cities, major highway junctions, breakpoints or other significant geographic landmarks that would be useful in describing the movement of storms. Information concerning each geographical location consists of 5 pieces of data listed on the same line separated by a comma.

The five data entries are:

1. The location name
2. The latitude either in degrees, minutes seconds (separated by slashes) or in decimal format
3. The longitude (same format as longitude)
4. The diameter of the location. For point locations, a diameter of "0" is appropriate. Any populated locations should have a non-zero diameter (decimal values allowed).
5. The listing priority (0-3) of the city, as described below

City listing priorities:

- 0 - Use this city as a "within county" reference point and always include in the city list.
- 1 - Always include this city in the city list.
- 2 - If the maximum number of cities have not been listed once all priority "0" and "1" cities have been included, include this city in the city list.
- 3 - If the maximum number of cities have note been listed once priority "0", "1", and "2" cities have been included, include this city in the list.

Additionally, city names prefixed with an ampersand (@) will not be used as a reference location used to identify the initial storm position, even if the storm is initially near that location. These locations will still be listed as an affected location using the priority rules above.

Here is an example of the entry for part of one county:

```
[TXC451,TXZ072]Tom Green
Water Valley,            31/40/03,100/43/00, 0,3
Christoval,              31/11/36,100/29/54, 1,2
Carlsbad,                31/35/53,100/37/57, 1,2
Grape Creek,             31/34/51,100/32/49, 1,2
Knickerbocker,           31/15/59,100/37/22, 1,2
San Angelo,              31/27/49,100/26/12,10,0
```

16. **Reference cities** are cities that are considered widely recognized and thus make good reference points when identifying the position of storms.

    The beginning of your reference city list is denoted by the section header [REF]. When determining the location of a storm, WISELOC will describe the location of the storm relative to the closest reference city, even if that city is in an unwarned county. However, if the city list for a county includes at least one priority "0" city, the closest of these cities will be used as a reference instead. If listing of cities outside of the warned area is not desired, leave out the [REF] section.

    The format for the city list in the [REF] section is the same as that for individual counties except all cities in the [REF] section must have a priority of "0". A maximum of 75 reference cities are allowed. See the example that follows:

    An example of this section follows:

    ```
    [REF]
    San Angelo,              31/27/49,100/26/12,10,0
    ```

17. The **end of file** marker [END] must be placed at the end of the data in the WISELOC.DAT file.

Once the WISELOC.DAT file has been assembled, run WISELOC from the DOS prompt. It will compile the data file and create a pointer file named WISELOC.PTR. Whenever WISELOC.DAT has been changed since the last compilation, WISELOC will recompile the pointer list. **Do *not*** write-protect the WISELOC.PTR file as this may prevent WISELOC from operating correctly.

Once the WISELOC.DAT and WISELOC.PTR files have been created, alter the severe thunderstorm and tornado templates used by WISE. For WISE to run this program, add the following lines to the template:

```
[RUN]
WISELOC.EXE {PATH}
```

To place the text within the output product, add the following lines to the template in the location where the text should be placed:

```
[FILE]
{PATH}TXT
```

If tornado and severe thunderstorm templates do not already exist, the templates in Appendix E may be used as an example.

If WISE has not been set up to produce severe thunderstorm or tornado warnings, use the WISE INSTALL program to edit WISE.SMT (the statement definition file) to add those statement definitions. Remember to specify the template in the statement definition. If you call the severe thunderstorm template SVR.TPL, enter SVR.TPL as the template. See the WISE instructions for more on editing the statement definition file.

In Appendix E is an example WISELOC.DAT. A few warning templates that use WISELOC are located in Appendix F.

WISELOC Execution Procedures

This program is run automatically by WISE when properly configured once the geographic areas included in the warning and the warning expiration time have been selected within the WISE program. When the program runs, you may bypass storm information entry by pressing “F1". When this is done, WISELOC only assembles the beginning of the basis of the warning rather than the entire basis. Alternately, the program may be entirely bypassed by pressing “F2". Pressing “F1" or “F2" may be desired when dealing with complex severe thunderstorm patterns that are not handled well by WISELOC (like a line of severe thunderstorms).

As WISELOC starts, the user is prompted for several fields of information. The up and down cursor (arrow) keys may be used to move up and down through these fields to make corrections. The information required in these fields includes:

1. The current time in UTC. If the computer time is correct, this will only have to be verified.
2. The time of a fix on the storm in UTC. This time should be the same as the time stamp on the WSR-88D product that will be used to position the storm. WISELOC will extrapolate the storm's initial position from this time.

3. The amount of time in minutes that the storms position should be extrapolated from the given location. This should be the difference between the product time stamp and the PUP's current time.
4. The latitude and longitude of the storm at the indicated time. The latitude and longitude are to be entered as degrees, minutes, and seconds (separated by slants "/") like 39/20/05. Enter the location of the storm's leading edge.
5. The severe weather path width. A default appears. If this width is too small, edit this entry to allow for a larger path width.
6. A prompt appears to verify that the information is correct. The reply defaults to “Y”. If “N” is entered, the cursor returns to the first input field.

After the storm information is entered, a menu or two will appear requesting information about the basis for the warning. Enter the number(s) corresponding to the appropriate selection at the prompt.

Once the program is complete, WISELOC will warn if any location's ETA is in less than 5 minutes when the list format includes the arrival time (%TIME%). Though WISELOC does not automatically remove these locations from the locations affected list, it does give the user a “heads-up” to the possibility that some locations may need to be manually removed from the list.

WISELOC will also provide a warning when more than 5 cities appear in the pathcast, since no bullet within a bullet warning may exceed 6 lines (1 line is used already for the pathcast lead statement). When this warning appears, the user must edit out the number of cities that are necessary to bring the total number of cities down to 5 on the final WISE editing screen.

Upon completion of the WISE warning template that called WISELOC, the text of the warning will appear on the WISE final editing screen. Inspect and edit the contents of the text if changes are necessary.

L WISELOC.EXE was built to make life easier when constructing its WISELOC.DAT data file by allowing cities to be listed once under a combined [COUNTY,ZONE] header rather than once under a [COUNTY] section header and then again under a [COUNTY] section header. This approach will not work when in areas where county and zone boundaries cross. For those counties that do not correspond one-to-one with a zone, separate zone and county sections must be created even though some cities will be common to both lists.

N NOTE: WISELOC.EXE could conceivably be used to simplify special marine warning issuance; however, there are additional facilities for handling marine areas that have not been included in the current version of WISELOC.EXE that would be required for complete success with this kind of product.

Appendix E - Examples of WISELOC.DAT

This appendix lists abbreviated examples of WISELOC.DAT files created for bullet warnings.

WISELOC.DAT for Bullet Warnings

```
[TRUNC]
[SVRSOURCE]
NATIONAL WEATHER SERVICE DOPPLER RADAR DETECTED
NATIONAL WEATHER SERVICE DOPPLER RADAR AND SPOTTER REPORTS INDICATED
LOCAL LAW ENFORCEMENT OFFICIALS REPORTED
A WEATHER SPOTTER REPORTED
THE PUBLIC REPORTED
[SVRTHREAT]
A SEVERE THUNDERSTORM
[SVRCITIES]
5
[SVRALL]
15
[SVRSD]
.2
[SVRMAXTIME]
40
[SVRWIDTH]
10
[SVRLISTLEAD]
THE SEVERE THUNDERSTORM WILL BE NEAR...
[SVRNOLIST]

[SVRFORMAT]
  %LOC% AT %TIME%
[TORSOURCE]
NATIONAL WEATHER SERVICE DOPPLER RADAR DETECTED
NATIONAL WEATHER SERVICE DOPPLER RADAR AND SPOTTER REPORTS INDICATED
LOCAL LAW ENFORCEMENT OFFICIALS REPORTED
A WEATHER SPOTTER REPORTED
THE PUBLIC REPORTED
[TORTHREAT]
A DEVELOPING TORNADO
A POSSIBLE TORNADO
A TORNADO
A STRONG AND VIOLENT TORNADO
[TORCITIES]
5
[TORALL]
15
[TORSD]
.2
[TORMAXTIME]
40
[TORWIDTH]
```

```
5
[TORLISTLEAD]
THE TORNADO IS EXPECTED TO BE NEAR...
[TORNOLIST]

[TORFORMAT]
  %LOC% AT %TIME%
[REF]
ALLEGAN, 42/31/45,85/51/19,3,0
ALMA, 43/22/44,84/39/35,3,0
BATTLE CREEK, 42/19/16,85/10/47,5,0
BALDWIN, 43/54/04,85/51/06,2,0
BIG RAPIDS, 43/41/53,85/29/01,3,0
STANTON, 43/17/33,85/04/53,2,0
ST JOHNS, 43/00/04,84/33/33,3,0
ST JOSEPH, 42/06/35,86/28/48,3,0
STURGIS, 41/47/57,85/25/09,3,0
THREE RIVERS, 41/56/38,85/37/57,3,0
WHITE CLOUD, 43/33/01,85/46/19,2,0
[LMZ530]MICHIGAN WATERS OF LAKE MICHIGAN
[MIZ532]NEW BUFFALO TO SOUTH HAVEN BREAKPOINT
NEW BUFFALO, 41/47/38,86/44/38,2,0
BENTON HARBOR, 42/07/00,86/27/15,3,0
SOUTH HAVEN, 42/24/11,86/16/25,2,0
UNION PIER, 41/49/41,86/41/33,1,3
WATERVLIET, 42/11/12,86/15/38,2,2
[MIC023,MIZ080]BRANCH COUNTY
BATAVIA, 41/54/45,85/05/53,0,3
SOUTH HAVEN, 42/24/11,86/16/25,2,0
[END]
```

Appendix F - Example WISE Warning Templates

This appendix contains examples of several WISE warning templates that are included in the WISE distribution. They are provided here as examples to demonstrate how various features of the WISE template feature may be used. The example demonstrates how a bullet warning using the WISE Locator may be produced using the WISE template feature.

The file name you give to a template has no affect on how it operates, as long as the file extension is “TPL”; however, in order to help recognize the function of the desired templates on the basis of its file name the following naming convention is recommended.

1. Begin the template file name with the 3-letter AFOS product category of the product the template produces (i.e. TOR). Should the AFOS product category be too ambiguous to accurately describe the function of the template, use a description file name (preferably 6 characters or less).

2. Append “B” to the file name if the template produces a product in bullet format.

3. Append “L” to the file name if the template produces a product using the WISE locator.

4. Use the “TPL” file extension.

Using this naming convention, a Tornado Warning in bullet format that uses WISE Locator would be “TORBL.TPL”.

Tornado bullet warning template using WISELOC

```
[REMARKS]
This template may be used to produce a tornado warning in the bullet format
using the WISE Storm Locator.
[END REMARKS]
"THE NATIONAL WEATHER SERVICE IN "
{NWS}
" HAS ISSUED A"
{CR}
{CR}
{LM=3}
{POS=1}
"* "
{WARN}
" FOR..."
```

```
{CR}
[COUNTIESMARINE]
{COUNTY}
" IN "
{STATE}
{CR}
[END COUNTIESMARINE]
{CR}
{POS=1}
"* UNTIL "
{LTEXPIRE}
{CR}
[END AUTO]
{LM=1}
[RUN]
WISELOC.EXE {PATH}
[FILE]
{PATH}TXT
{CR}
[REMARKS]
The following lines may be deleted to remove call to action query from
template
[END REMARKS]
[MENU]
"SELECT A CALL TO ACTION:"
"GO TO THE BASEMENT..."
"A TORNADO IS ON THE GROUND..."
"GO TO A SMALL INTERIOR ROOM..."
"IF YOU ARE IN A CAR..."
"ABANDON MOBILE HOMES..."
[END MENU]
[SELECT]
{CHOICE1}
"GO TO THE BASEMENT OR A SMALL INTERIOR ROOM ON THE LOWEST FLOOR!"
{CHOICE2}
"A TORNADO IS ON THE GROUND! GO TO THE BASEMENT! IF A BASEMENT IS NOT "
"AVAILABLE...GO TO A SMALL INTERIOR ROOM ON THE LOWEST FLOOR!"
{CHOICE3}
"IF YOU ARE IN A MULTIPLE STORY BUILDING...GO TO A SMALL INTERIOR ROOM AWAY "
"FROM WINDOWS."
{CHOICE4}
"IF YOU ARE IN A CAR...GO IN A NEARBY STURDY BUILDING! AS A LAST RESORT LIE "
"FLAT IN A DITCH AND COVER YOUR HEAD."
{CHOICE5}
"ABANDON MOBILE HOMES! GO IN A NEARBY STURDY BUILDING. AS A LAST RESORT LIE "
"FLAT IN A DITCH AND COVER YOUR HEAD."
[END SELECT]
{CR}
{CR}
[START ECHO]
"LAST NAME OR INITIALS"
[END ECHO]
[GET TEXT]
{TEXT}
{CR}
```

Flash flood warning template

```
[REMARKS]
This template may be used to produce a flash flood warning in the bullet
format.
[END REMARKS]
"THE NATIONAL WEATHER SERVICE IN "
{NWS}
" HAS ISSUED A"
{CR}
{CR}
{LM=3}
{POS=1}
"* "
{WARN}
" FOR..."
{CR}
[COUNTIES]
{COUNTY}
" IN "
{STATE}
{CR}
[END COUNTIES]
{CR}
{POS=1}
"* UNTIL "
{LTEXPIRE}
{CR}
[END AUTO]
{POS=1}
"* AT "
[START ECHO]
"TIME THAT HEAVY RAIN INDICATED (i.e. 450 PM CDT):"
[END ECHO]
[GET TEXT]
{TEXT}
"... "
[MENU]
"THUNDERSTORM WITH VERY HEAVY RAIN INDICATED BY:"
"NATIONAL WEATHER SERVICE DOPPLER RADAR"
"SPOTTERS"
"AREA LAW ENFORCEMENT"
[END MENU]
{TEXT}
" INDICATED A THUNDERSTORM WITH VERY HEAVY RAIN "
[START ECHO]
"LOCATION OF THUNDERSTORM:"
[END ECHO]
[GET TEXT]
{TEXT}
"... MOVING "
[START ECHO]
```

```
"THUNDERSTORM MOVEMENT (i.e. SLOWLY EAST)
[END ECHO]
[GET TEXT]
{TEXT}
"."
{CR}
{CR}
{POS=1}
"* "
[START ECHO]
"VERY BRIEFLY DESCRIBE FLOODING SCENARIO:"
[END ECHO]
[EDIT]
{CR}
{LM=1}
[REMARKS]
The following lines may be deleted to remove call to action query from
template
[END REMARKS]
[MENU]
"SELECT A CALL TO ACTION:"
"DON'T DRIVE INTO AREAS WHERE WATER COVERS THE ROAD..."
"DON'T DRIVE ACROSS FLOODED ROADS..."
"MOVE TO HIGHER GROUND IF FLOOD WATERS THREATEN..."
"DON'T CAMP NEAR STREAMS..."
"BE ESPECIALLY CAUTIOUS AT NIGHT..."
[END MENU]
[SELECT]
{CHOICE1}
"DON'T DRIVE INTO AREAS WHERE WATER COVERS THE ROAD!"
{CHOICE2}
"DON'T DRIVE ACROSS FLOODED ROADS! MOST FLASH FLOOD DEATHS OCCUR IN "
"AUTOMOBILES."
{CHOICE3}
"MOVE TO HIGHER GROUND IF FLOOD WATERS THREATEN."
{CHOICE4}
"DON'T CAMP NEAR STREAMS OR OTHER LOW AREAS SUBJECT TO FLOODING!"
{CHOICE5}
"BE ESPECIALLY CAUTIOUS AT NIGHT WHEN IT IS HARDER TO RECOGNIZE THE "
"DANGER OF FLOODING."
[END SELECT]
{CR}
{CR}
[START ECHO]
"LAST NAME OR INITIALS"
[END ECHO]
[GET TEXT]
{TEXT}
{CR}
```

Non-precipitation weather message template

```
[REMARKS]
```

```
This template may be used to produce a non-precipitation "Weather Message".
[END REMARKS]
[END AUTO]
[SUMMARY]
[START ECHO]
"ENTER AN OVERVIEW HEADLINE FOR THIS WEATHER MESSAGE ALONG WITH AN OVERVIEW"
"CONTAINING GENERAL INFORMATION IN THE FORMAT DEMONSTRATED BELOW:"
""
"...OVERVIEW HEADLINE..."
".OVERVIEW WITH GENERAL INFORMATION (PLEASE NOTE THE PRECEDING DOT)"
[END ECHO]
[EDIT]
[END SUMMARY]
[START ECHO]
"ENTER A HEADLINE FOR THIS GROUP OF THE WEATHER MESSAGE FOLLOWED BY"
"SPECIFIC INFORMATION IN THE FORMAT DEMONSTRATED BELOW:"
""
"...HEADLINE TEXT..."
"FORECAST INFORMATION (NOTE THAT THERE IS NO BLANK LINE AFTER THE HEADLINE)"
[END ECHO]
[EDIT]
```

Appendix G - AFOS Communications Considerations

This appendix is to provide a handy reference for correct wiring of AFOS-PC communications. Although AFOS to PC communications have been employed in NWS offices for a number of years, the number of distinct wiring possibilities has resulted in numerous occasions of incorrect wiring configurations, occasionally resulting in garbled or lost products during transmission to AFOS.

Discussed below are basic AFOS wiring techniques, in some detail, that will result in successful communications with AFOS. Following these guidelines is especially important when attempting to wire several PCs to a common AFOS serial (TTY) port through a serial peripheral sharing device (PSD). There are important AFOS configuration details not covered here that are covered quite adequately in AFOS references and engineering handbooks. The primary consideration here is proper wiring.

Serial communication concepts

PC serial communications typically require a connection between the PC and an external peripheral device, or another computer, consisting of seven connections (wires) that carry a ground (GND) and six signals: transmit (XMIT), receive (RECV), ready to send (RTS), clear to send (CTS), data set ready (DSR), and data terminal ready (DTR). The RTS, CTS, DSR, and DTR signals provide handshaking between the PC and the external serial device. The actual data is carried by the XMIT and RECV signals. If no handshaking were required, only two wires, carrying the XMIT and RECV signals, would be necessary for two-way serial communications.

Serial communication links typically consist of a control device (such as a computer) and a terminal device (such as a modem) connected via a cable. So that serial cable connectors may be wired in the simplest configuration (pin to pin) the send and receive signals (data and handshaking) on the two ends must be complementary - that is if pin 3 on the computer end is XMIT, then pin 3 on the device end must be RECV. Thus, there are two serial pinouts. On the control device or computer, the serial port pinout is configured in a data control equipment (DCE) configuration. On the terminal device, the serial port pinout is ordinarily configured in the complementary data terminal equipment (DTE) configuration.

A chart indicating DCE and DTE serial port pinouts for both DB9 and DB25 connectors follows in table G.1. In reference to this chart, note that in order to construct a serial cable with DB25 connectors on both ends between a DCE and DTE device, pins 2 through 7 and 20 would be connected to the same pins on both ends (pin to pin).

Likewise, to make a serial cable with DB9 connectors on both ends between a DCE and DTE device, pins 2 through 8 would be connected pin to pin also.

PC (DCE)		Signal	Device (DTE)	
DB25	DB9		DB25	DB9
2	3	XMIT	3	2
3	2	RECV	2	3
4	7	RTS	5	8
5	8	CTS	4	7
6	6	DSR	20	4
7	5	GND	7	5
20	4	DTR	6	6

Table G.1. Signal pinouts for DB9 and DB25 connectors on DCE and DTE serial ports.

It is possible to interface two DCE devices or two DTE devices by altering this pinout such that the signals sent on one end are received by the proper pins on the other end. The pins that must be paired across the serial cable are XMIT-RECV, CTS-RTS, DSR-DTR, and GND-GND.

For instance, to pair the CTS signal on a DB9 DCE serial port with the RTS pin on a DB25 DCE serial port, one wire of this cable would have to connect pin 8 on the DB9 connector to pin 4 on the DB25 connector.

Single PC to AFOS (direct) wiring

AFOS TTY ports do not require or support handshaking. AFOS hardware and software is designed such that the TTY ports are always listening for data, and AFOS assumes that it is always free to send data through a TTY port - the device on the other end is expected to be ready at all times. Provided PC software is designed such that it is listening for data when data may be transmitted from AFOS, connecting the PC to AFOS via two signal wires and the ground is sufficient.

Thus, when AFOS and a single PC are connected for serial communications, there are three wires that must be attached between AFOS and the PC: GND, XMIT, RECV. AFOS only requires a ground and the XMIT and RECV signals, yet the majority of PC software will require handshaking before transmission. For this reason, the RTS and

CTS signals must be hardwired as must the DSR and DTR signals. WISE does not require handshaking when there is a direct connection to AFOS.

Wiring pinouts for DB9 and DB25 connectors on the PC end of this connection are provided in table G.2. below.

	DB25	DB9
GND	7	5
XMIT	2	3
RECV	3	2
RTS-CTS	**4-5**	**7-8**
DSR-DTR	**6-20**	**6-4**

Table G.2. Single PC to AFOS pinouts for DB9 and DB25 connectors. Bold pinouts represent pins that are hardwired together on the connector.

Multiple PC to AFOS (indirect) wiring with a PSD

A PSD may be used to connect multiple PCs to one AFOS TTY port. The PSD acts as a traffic cop, indicating to the connected PCs which one is clear to send data at any one time. When a computer is about to send serial data, it will signal the intent to send by first raising the DSR signal, which is received as a DTR signal by the PSD. If the PSD is not occupied by data communications with another computer, it will then lock the serial line for the computer requesting serial communications so that other computers cannot interfere with the serial communication.

Once the serial line to the PC is locked and the PSD has received handshaking signals from the serial device (in this case AFOS) to which it is connected, the PSD will then send a CTS signal, which is received as RTS by the PC, giving the PC clearance to commence serial communications. At that point, data can be transmitted to and from AFOS through the PSD.

If the PSD is occupied by another PC, the PSD will not give any other computers the CTS signal. Depending on the software, the PC may wait some time before giving up, or timing out. In the case of WISE, the period of time the PC will wait before timing out is 30 seconds. Other programs will have different timeout periods.

As previously indicated, when multiple PCs are connected to AFOS through a PSD, handshaking is required. This requires 6 signals and a ground, as opposed to 2 signals

and a ground for a single PC connected directly to AFOS. To ensure that all the correct signals are present, it is easiest to use a pre-made ***serial*** cable. Alternately, custom cables may be made with 7 conductor shielded wiring and a pair of DB connectors: DB9-DB9, DB25-DB25 or DB9-DB25 (depending on PC and PSD needs). Again, recall that a DB9 to DB9 serial cable requires pins 2 through 8 to be connected pin to pin, and a DB25 to DB25 serial cable requires pins 2 through 7 and 20 to be connected pin to pin across the serial cable.

The computer will almost assuredly have a DCE serial port. Note that some PSDs are designed such that the input ports (PC side in this case) can be configured as DTE or DCE ports. So that standard serial cables may be used to connect PCs to PSD units with this capability, the input ports should be configured as DTE ports. However, some PSDs will have DCE ports on the input side that cannot be configured as DTE ports. In this case, the cable connecting the computer and the PSD can be custom made to match the appropriate pins on both ends. Table G.3 provides a conversion chart to facilitate construction of such a cable. Note that this cable is also a “null modem” cable that can be used to connect two PCs via serial ports.

PC (DCE)			PSD (DCE)	
DB9	DB25	Signals	DB25	DB9
5	7	GND<>GND	7	5
3	2	XMIT<>RECV	3	2
7	4	RTS<>CTS	5	8
6	6	DSR<>DTR	20	4
2	3	RECV<>XMIT	2	3
8	5	CTS<>RTS	4	7
4	20	DTR<>DSR	6	6

Table G.3. Cable wiring chart for making DCE to DCE serial cables.

As pointed out previously, AFOS does not provide handshaking, so the handshaking signals must be hardwired on the PSD serial port connected to AFOS in the same way that a PC serial port connected to AFOS would be hardwired. Refer back to table G.2 in the previous section for details. Also note that the wiring indicated for table G.2 assumes that the PSD output port (to AFOS) is a DCE port. If it is instead a DTE port the XMIT and RECV pins are reversed, otherwise the hardwired pins are the same.

Using a PSD with ABT hardware

It is not uncommon to connect a series of computers to the ABT hardware so that several computers may remain capable of maintaining communications with a remote AFOS when the local AFOS is down. To successfully do this, the PSD and computers are wired as described in the preceding sections, with the PSD (rather than the ABT computer) connected to the ABT switch box (rather than AFOS) by the GND, XMIT, and RECV wires.

Appendix H - PC to AFOS Communications with Windows

Regardless of the version of Windows (3.1, 3.11, 95, 98) special steps must be taken to ensure that products will get to AFOS, particularly when other programs that access the AFOS communications port may be running in memory concurrently with WISE (or other AFOS communications software). Default behavior in Windows 3.1 is to warn the user that two programs are accessing the same port, giving the user the option of choosing which program actually gets the communications port. This is not ideal, but generally works okay or at least gives the user a warning that a problem may be imminent. Windows 3.1 also provides a Control Panel Applet (386Enh) that allows the user to determine how Windows should react to a communications port conflict.

In Windows 95 and presumably in Windows 98, the default behavior is to disable a program's access to the communications port without warning when another program has already accessed the communications port. Unfortunately, for programs that only transmit to AFOS, Windows has a nasty habit of giving the appearance of successful communications when this occurs.

To avoid these undesirable effects, the following should be added to the [386Enh] section in the SYSTEM.INI, found in the Windows directory:

```
Com#AutoAssign=12          # is the AFOS communications port (1-4)
```

The effect of adding this line is the same regardless of the version of Windows in use. What this setting tells Windows is that a program can hold the communications port indicated open for up to 12 seconds after the program's last access to that port. The reason for using 12 seconds for this setting is to ensure that a program requesting products has time to receive the requested products before another program takes the port. If two programs try to access this port within 12 seconds of each other, the user will be warned and be allowed to choose the program that may access the port. The other program's access to this port will be disabled. Though this is a potential problem, operationally the likelihood of this occurrence is very low and has not been observed by the author.

Though as presented here, this change to SYSTEM.INI is to ensure successful use of WISE, this setting affects all programs installed on the same computer that access a communications port to talk to AFOS. So, making this change will improve the dependability of all PC to AFOS communications packages.